Ecological Impact Assessment

North Road, West Boldon

October 2020

Final Report - Confidential

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Field Investigations and Data

Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work. Where any data supplied by the client or from other sources have been used it has been assumed that the information is correct. No responsibility can be accepted by EcoNorth Ltd. for inaccuracies in the data supplied by any other party.

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1. Summary

EcoNorth Ltd. was commissioned by Ethical Partnership to undertake an Ecological Impact Assessment (EcIA), comprising a Preliminary Ecological Appraisal (PEA) and protected species surveys of land at North Road, West Boldon, in South Tyneside. The initial survey was undertaken by Ecologist Sarah Hawes and Assistant Ecologist Henry Barrett on 19th December 2019. Habitat maps were produced in accordance with the methodology described in the Handbook for Phase 1 Habitat Survey (JNCC, 2016), with the survey 'extended' to determine the potential suitability of the site for protected species.

Following the results of the PEA and PBRA, protected species surveys were carried out. These comprised one bat activity survey of a building with low roost potential, and an otter and water vole survey of the River Don on the 27th July 2020.

A residential development is proposed for the site, which is currently used as pasture for horses; this report is designed to highlight key ecological constraints, support the full planning application and assess the potential impacts upon the ecological interests of the site.

A desk study completed prior to the field visit highlighted the presence of two statutory and 19 non-statutory sites within 2km of the site boundary, the closest of which (River Don, North Road) lies within five metres of the site boundary; no statutory or non-statutory sites designated due to the presence of bats are known to be present within 2km of the development area. The study also identified the presence of common pipistrelles, otter, water vole, hedgehog, brown hare, Kingfisher, and Barn Owl within 2km of the site boundary.

More distant statutory designated sites include the Northumbria Coast SPA, Durham Coast SAC and Northumbria Coast Ramsar site. Consideration of potential effects on those sites is included within the assessment. While no direct effects are anticipated due to habitat loss or construction stage disturbance, increases in visitor pressure due to net increases in residential development are acknowledged within the report and it is recommended that the proposed residential development makes a financial contribution to South Tyneside Council's mitigation service, which is designed to protect the European sites and offset the potential effects of increased visitor pressure. This provides a strategic approach to protecting European sites from increased residential pressure, whereby developers will be required to pay a financial contribution per unit into the scheme (paid on commencement of the development) and is likely to be appropriate for this site.

The following table highlights the key ecological features/species identified on site and those which have the potential to be present, based on the information available to date. Requirements for further surveys are highlighted, while necessary mitigation measures are provided in Section 7.

Table 1: Key Ecological Features / Species identified on Site

Ecological Feature	Presence on Site	Ecological Value	Further Surveys Required Pre-planning?	Key Mitigation
Habitats	The majority of the site consists of poached, improved grassland used as permanent (horse) pasture. Patches of tall ruderal and scattered trees are also present. A stable building is located within the north-eastern section of the site with hard standing adjacent. Most of the site boundary, apart from along the eastern edge, is delineated by fencing. Hedgerows are also present along sections of the site boundary.	Low – Local	No	All hedgerows should be retained and managed as outlined within section 7. All trees along the river (along the southern and northern border) must be retained. If the scattered trees consisting of hawthorn are to be removed, then they must be replaced with locally appropriate native species on a 1:1 basis in an appropriate location on site.
Bats	<u>Habitats</u> The habitats on site are considered suitable for commuting and foraging for bats. Moderate levels of common pipistrelle activity were recorded with individual bats foraging and commuting on site. A single *Myotis* was also recorded.	Local	No	An appropriate lighting scheme is recommended in order to retain the foraging and commuting potential of the key features on site. See Section 7 for further details. Integration of bat boxes within a series of the new buildings present on site
	<u>Building</u> The stable on site is considered to be of low suitability for roosting bats however, no roosts were identified	Low	No	Works to proceed to a precautionary method statement Checking surveys if no works within 12 months of the date of this report

Ecological Feature	Presence on Site	Ecological Value	Further Surveys Required Pre-planning?	Key Mitigation
	during the activity survey completed in July 2020.			
Otter	The habitat which borders the river is considered suitable for otters to use for commuting and foraging purposes. Otters have been recorded adjacent to the site in the past; although no field signs were noted during the PEA survey, evidence indicating the presence of the species was recorded during the species-specific survey in July 2020	Local	No	The work will proceed under a CEMP (Construction Environmental Management Plan) with checking surveys carried out in advance of the works commencing. The ecological function of the river must be retained with no negative impacts, either direct or indirect, on the watercourse or adjacent habitats.
Water Vole	A range of water vole field signs were recorded adjacent to the site during the PEA and species-specific survey. The river and riparian habitats are considered to provide some good quality habitat for water vole to use for burrows, commuting and foraging purposes.	Local	No	The work will proceed under a CEMP (Construction Environmental Management Plan) with update surveys carried out in advance of the works commencing. The ecological function of the river must be retained with no negative impacts, either direct or indirect, on the watercourse or adjacent habitats.
Red Squirrel	The trees on site are considered sub-optimal for red squirrels and insufficient to support a viable population. No red squirrel are known to have been recorded within 2km of the site. The site links to woodland to the south of the site therefore it is possible red squirrel	Low	No	N/A

Ecological Feature	Presence on Site	Ecological Value	Further Surveys Required Pre-planning?	Key Mitigation
	may occur on occasion if commuting through the site.			
Badger	The habitat on site is considered suitable for foraging badgers and sett creation. Although no evidence of badgers was recorded during the PEA survey, a potential badger sett was recorded along the western bank of the river during the species-specific survey, and a badger was recorded foraging on site during the bat activity survey in July.	Local	No	Pre-works check prior to works commencing, with no heavy machinery works permitted within 30m, light machinery works within 20m, or hand tool use within 10m of any sett unless a licence is first obtained from Natural England Works across the site to proceed to an appropriately precautionary method statement
Migratory Fish	The river adjacent to the site is within the distribution range of migratory fish such as brown trout.	Local	No - Unless the design will impact the watercourse either directly or indirectly.	The ecological function of the river must be maintained with no negative impacts, either direct or indirect on the watercourse or adjacent habitats. Further mitigation measures outlined in section 7.
Birds	A range of birds were noted during the survey and the habitats present provide good foraging and nesting habitat for a small range of locally common passerines	Local	No	Retention or creation of habitats (vegetation) suitable for use by a range of species Inclusion of built-in nest boxes suitable for use by species of high conservation importance, such as House Sparrow, in at least 10% of the new properties Pre-works check for nesting birds prior to works commencing if undertaken during the breeding season, see section 7.

Ecological Feature	Presence on Site	Ecological Value	Further Surveys Required Pre-planning?	Key Mitigation
Invasive Species	Himalayan balsam and giant hogweed were recorded during the protected species survey	N/A	N/A	Removal / control by a licensed contractor
BAP species	No evidence of hedgehog however habitat considered suitable.	Low	No	Protective measures required during site clearance. Creation of gaps at least 13cm x 13cm in all new boundary features, to ensure the site remains permeable to such species.

The potential presence of the following species was also considered as part of the assessment: white-clawed crayfish, reptiles and great crested newts. The lack of suitable habitat on site (or ponds within 500m with regard to great crested newts) was considered to preclude the use of this area by these species.

The client is happy to commit to the implementation of the mitigation measures detailed within this report and is aware that these are likely to be made a condition of any planning consent and/or Natural England license which may be granted.

2. Introduction

2.1 Background

EcoNorth Ltd. was commissioned by Ethical Partnership (henceforth referred to as 'the client') to undertake an Ecological Impact Assessment of land at North Road, near West Boldon in South Tyneside (central grid reference NZ 34785 61189). This comprised a Preliminary Ecological Appraisal (PEA) and a series of species-specific surveys between December 2019 and July 2020. The client proposes to develop the site for residential purposes. The survey was designed to map the habitats and determine the potential suitability of the site for protected species, to highlight key ecological constraints and support the full planning application.

This report:

- Sets out the results of the survey
- Analyses the site's value for nature conservation
- Identifies additional survey requirements in order to fully determine the baseline ecological conditions on the site
- Identifies key avoidance, mitigation and/or compensation measures required to ensure the proposals do not have an adverse impact upon biodiversity

2.2 Site Context

The site is located within the village of West Boldon which lies approximately 6km west of the North Sea coast. The River Don, which runs from north to south immediately to the east of the site, is a tributary of the River Tyne. The surrounding area is dominated by residential developments to the north and east, and an industrial estate to the west. Immediately to the south east is a small stand of trees and further residential properties. In the wider landscape, there is arable land to the south and west and further housing to the east. To the north there is a mixture of residential properties, plantation woodland and arable fields.

Figure 1 identifies the location and extent of the development site.

Figure 1: Indicative Site Boundary

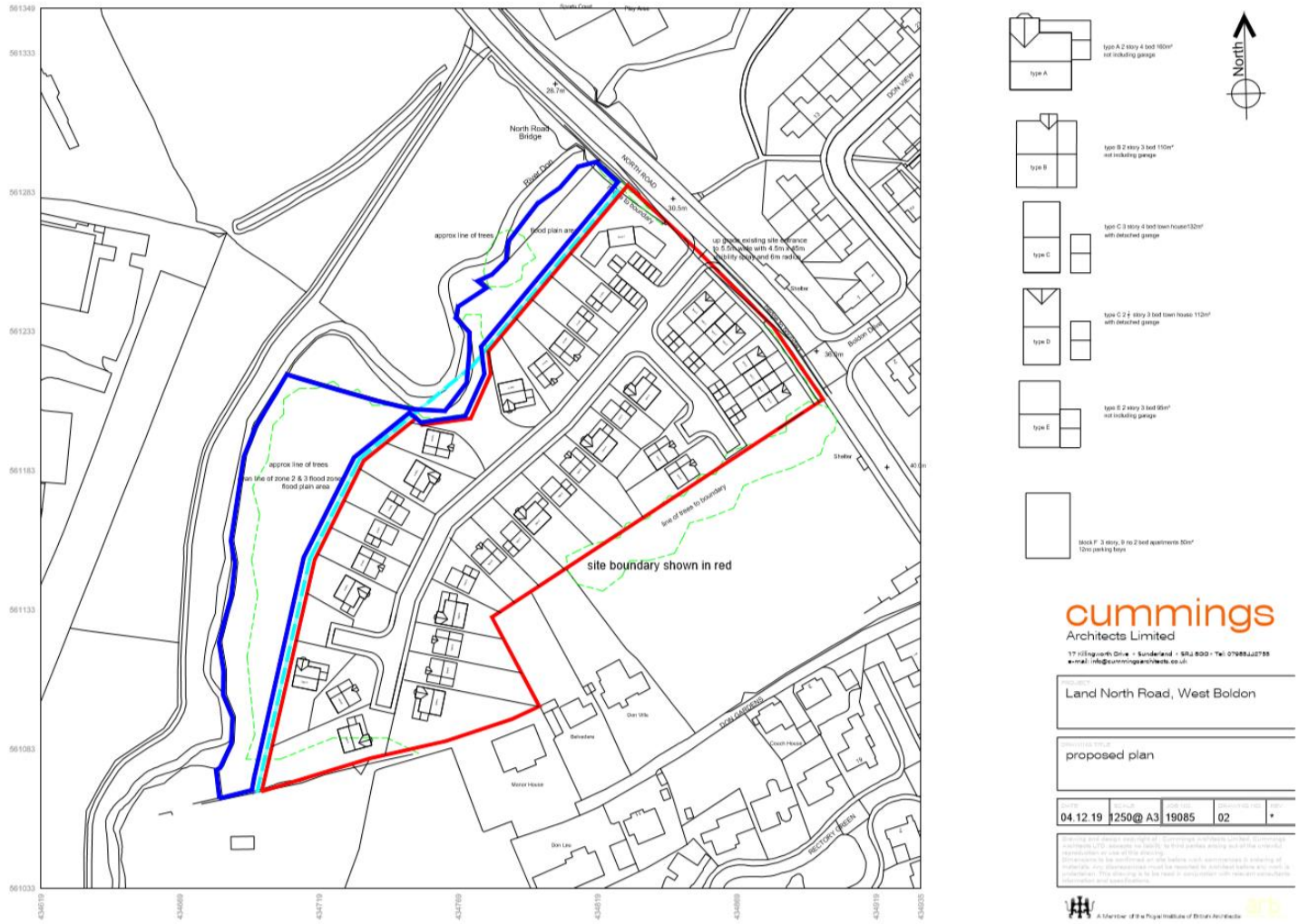


2.3 Nature of the Proposals

A residential development is proposed for the site, which is currently used as pasture for horses. Figure 2 shows the current layout and footprint of the proposed development; the area in blue is retained as a buffer along the River Don, and the area outlined in red is the development footprint. Surface drainage works which will impact the River Don are proposed as shown in Figure 3.

This report is designed to highlight key ecological constraints and support the full planning application.

Figure 2: Development Proposals (provided by client)



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Land North Road, West Boldon

proposed plan

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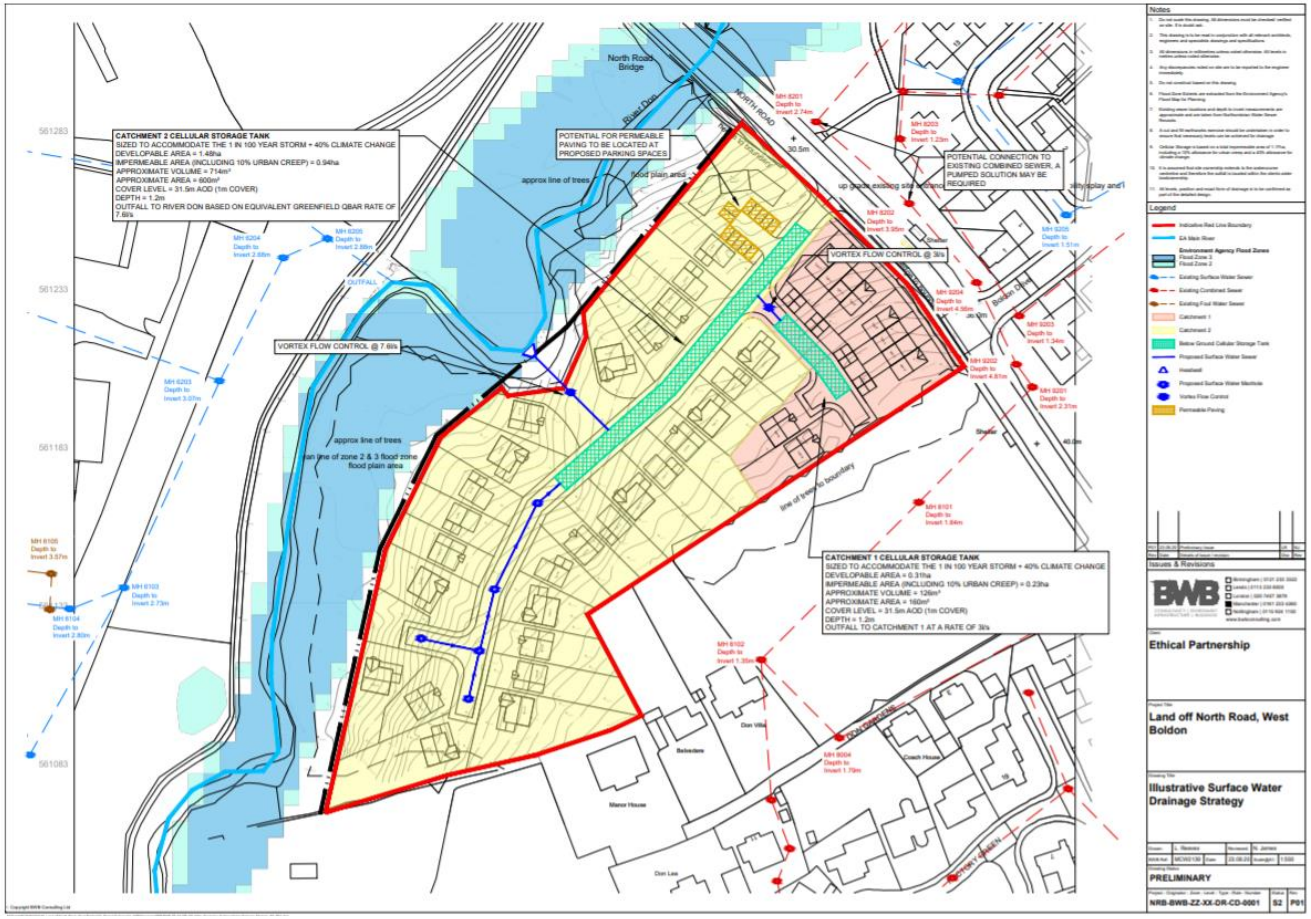
Figure 3: Illustrative Surface Water Drainage Strategy (provided by client)



3. Planning Policy and Legislation

3.1 Planning Policy and Guidance

A series of national and local planning policies are in place which are designed to ensure that development works do not have an adverse impact upon biodiversity, at a site or wider level. Such policies ensure that both developers and public bodies must give due consideration to the potential effects of development works upon both ecological receptors (in line with existing wildlife legislation) and biodiversity.

3.1.1 National Planning Policy Framework (NPPF) (2019)

The NPPF outlines the Government's policies through the planning process, acting as guidance for local planning authorities and decision-makers. The document places a duty on local authorities to consider the principles included when assessing planning applications and preparing Local Plans and Regional Spatial Strategies. Chapter 15 relates to the conservation and enhancement of the natural environment, in line with existing wildlife legislation. Further details are provided on the gov.uk website.

3.1.2 Biodiversity Action Plans (BAPs)

The UK BAP was published in 1994 to guide national strategies for the conservation of biodiversity. BAPs were designed to ensure the conservation and re-establishment of natural habitats, and that measures were implemented to aid the conservation and enhancement of habitats and species of local importance, the latter through the development of Local BAPs. The UK BAP was succeeded by the 'UK Post-2010 Biodiversity Framework' in 2012 however, the lists of species and habitats of conservation importance are still considered to remain a valuable tool for identifying features of local and national conservation concern. As such, the potential presence of both Local and UK BAP habitats and species were considered throughout the surveys and assessment.

3.2 Legislation

3.2.1 Summary of Legislation

A range of legislation is in place to ensure that habitats and species of conservation importance are protected from both direct and indirect harm. Key legislation includes:

- The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (The Habitat Regulations)
- The Convention on the Conservation of European Wildlife and Natural Habitats 1979 (The Bern Convention)
- The Wildlife and Countryside Act 1981 (as amended)

- The Natural Environment and Rural Communities (NERC) Act 2006
- The Countryside and Rights of Way (CRoW) Act 2000
- The Wild Mammals (Protection) Act 1996
- The Protection of Badgers Act 1992
- The Hedgerow Regulations 1997

An overview of the above legislation is provided in Appendix A.

The potential presence, on or near the site, of species afforded protection under the above legislation was considered throughout the surveys and assessment. Species considered include:

- Bats
- Great crested newt
- Otter
- Reptiles
- Water vole
- Red squirrel
- Badger
- Birds
- Migratory fish

An overview of the legislation and level of protection relating to such species is provided in Appendix A.

4. Methodology

4.1 Desk Study

Contextual information was gathered as part of a desk study undertaken prior to the start of field surveys. Such information can identify protected or notable species which may occur on the proposed development site or in the local area, as well as identifying statutory and non-statutory ecological sites which may have the potential to be affected by the proposals. Species records and the location of statutory and non-statutory nature conservation sites within 2km of the survey site were requested from the Environmental Records and Information Centre for the North East (ERIC North East) and from the Multi-

Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk). The 'MAGIC' website was also checked for information relating to European Protected Species Mitigation Licenses (EPSML) within 2km of the site.

Additionally, 1:10,000 Ordnance Survey maps were consulted to help identify waterbodies or watercourses within 500m of the site. This search reflects the potential for great crested newts *Triturus cristatus* to utilise terrestrial habitat up to 500m from their breeding ponds and also helps determine the potential for other riparian or semi-aquatic species which will move away from a watercourse to be present (e.g. otter *Lutra lutra)*.

It should be noted that an absence of records is likely to reflect an absence of survey data and cannot be taken as confirmation that a particular species is not present in the site or surrounding area.

4.2 Field Survey

4.2.1 Habitats

Mapping of the habitats within the site followed the Phase 1 habitat survey methodology outlined in the 2016 edition of the 'Handbook for Phase 1 habitat survey' by the Joint Nature Conservation Committee (JNCC). This follows a standardised system which can be easily interpreted, with habitats and boundary features correlating to one of around ninety set definitions. Target notes were used to record further information regarding features of interest, or specific habitats or features identified during the survey which do not closely match any of the Phase 1 habitat criteria.

Plant species were identified in accordance with Rose (2006) and Stace (2019). A search was also conducted for presence of Schedule 9 invasive non-native plant species such as Japanese knotweed *Fallopia japonica* and Himalayan balsam *Impatiens glandulifera*.

The results of the Phase 1 habitat survey are shown in Appendix B, with Target Notes provided in Appendix C and site photographs in Appendix D.

4.2.2 Protected and Notable Species

Throughout the field survey, searches were made for field signs indicating the presence of protected and notable species, including but not being limited to those species listed in Section 3.2. Any field signs recorded (including sightings of the animals themselves) were mapped; any such signs are illustrated in Appendix B and listed as Target Notes in Appendix C. An assessment was also made of the potential for the site and adjacent areas to support protected and notable species, to identify where the proposals may impact upon such species and identify any requirements for further (species-specific) surveys.

4.2.3 Otter Survey

A species-specific otter survey was undertaken on 21st July 2020, in order to determine the presence/absence of the species within the site. The survey included searches for spraint, jelly, paths, footprints, feeding remains, couches/lying-up sites and holts, as well as sightings of otters. The length of the watercourse was walked in order to search for such field signs and checks were made of any areas of standing water which may also be suitable for use by the species.

4.2.4 Water Vole Survey

Those waterbodies/watercourses identified through the PEA survey as having the potential to support water vole were subject to a species-specific survey on 21st July 2020. This survey was designed to provide further detail on the suitability of such features for water vole and to determine the presence or absence of the species within the site or adjacent areas. Field signs searched for included droppings, latrines, feeding stations/remains, lawns, nests, footprints, runways, burrows and sightings of the animals themselves. A characteristic 'plop' noise is often typically heard when water voles enter the water, which can also be used as an indication of the presence of the species at a site.

4.2.5 Bats

Habitat Assessment

An assessment of the potential suitability of the habitats within the site and surrounding area for bats was undertaken on 19th December 2019, as part of the initial field survey. This included an assessment using the criteria set out in the Bat Conservation Trust Survey Guidelines, as shown in Table 2, below.

These criteria were used to provide a guide as to the potential suitability of the site for bats. It is important to note that an absence of potential commuting routes or 'good quality' foraging areas around a site can not be used to confirm the absence of bats from a site. Bats are highly mobile animals which will use different habitats at different times of the year, therefore an appropriate level of additional survey work must be carried out in order to determine if and how bats utilise a particular site.

Table 2: BCT Guidelines for Assessing the Value of Habitats for Bats

Feature	Value
Evidence indicating that a structure/feature is used by bats, such as: • Bats seen roosting or emerging/entering a structure/ feature; • Field signs such as droppings, feeding remains or carcasses found; and/or • Bats heard calling or 'chattering' within a roost. Bats recorded/observed using an area for foraging or commuting	Confirmed Roost
• Site is close to known roosts • Site is connected with the wider landscape by strong linear features that would be used by commuting bats e.g. river/stream valleys or hedgerows • Habitat of high quality for foraging bats e.g. broadleaved woodland, tree-lined watercourses, parkland • Buildings, trees or other structures e.g. mines, caves, tunnels, ice houses and cellars, with features of particular significance for roosting bats	High Value Habitat
• Site is connected with the wider landscape by linear features that could be used by commuting bats e.g. lines of trees and scrub or linked back gardens • Habitat could be used by foraging bats e.g. trees, scrub, grassland or water • Several potential roosts in the buildings, trees or other structures	
• Isolated site not connected by prominent linear features (but if suitable foraging habitat is adjacent it may be valuable if it is all that is available • Isolated habitat that could be used by foraging bats e.g. a lone tree or patch of scrub, but not parkland • Small number of potential roosts generally of lower conservation importance e.g. probably not maternity roosts or hibernacula	
• No features that could be used by roosting bats for foraging, roosting or commuting.	Low Value Habitat

Preliminary Bat Roost Assessment / Field Sign Survey

An initial inspection of the buildings within the site was completed on 19th December 2019. The internal and external areas of the building were inspected and notes made regarding both the nature of the structure (materials, loft structure, age etc.) and condition of the building, to help identify any areas or features which may allow bats access or have the potential to provide roosting opportunities. Where potential access or roosting opportunities were noted, these were inspected for signs of bats, including droppings, feeding remains, staining or bats themselves.

The survey included an assessment of the likely potential use of the building at times throughout the year to take into account the fact that bats will utilise different roost sites at different times and for different purposes, sometimes including multiple roost types within a single structure.

The layout of the buildings within the site is shown in Appendix B; site photographs are provided in Appendix C.

Trees

An assessment was made of the suitability of the trees within the site to support roosting bats on 19th December 2019. Where possible each tree was inspected and notes made of the any features which could provide potential bat roost sites e.g. holes, splits in the trunk or limbs, flaking bark, areas covered by ivy *Hedra helix*. Each tree was inspected from the ground using binoculars and a high-powered torch (Clulite CB2) with higher areas accessed by ladder if necessary/safe to do so.

Where any field signs indicating the presence of bats, or bats themselves were recorded, a note was made of the location of the roost. Where roosts were not confirmed, the trees were classed as negligible, low, moderate or high suitability, based on the potential for such features to be present.

Activity Surveys

One dusk activity survey was completed at the site, which commenced 15 minutes before sunset and continued for 1.5 hours after sunset, in line with current best-practice guidelines.

Surveyors were positioned around the exterior of the building to watch for bats emerging from the structure, with all elevations viewed at one time and the line-of-sight not exceeding 50m. Surveyor locations are shown in Appendix J.

Each surveyor used an EchoMeter Touch Pro 2 detector linked to an Amazon Fire tablet to identify bats and allow subsequent analysis of calls where necessary. Bat activity during the surveys was recorded on field sheets detailing the time, roost emergence/entrance points, the number of bats, species (where possible), key flight-lines and foraging areas. A

note was also made of any other activity recorded, such as foraging or social calling. Details of the activity surveys are provided in Appendix J.

Analysis of Results

Recordings made using the EchoMeter Touch Pro 2 detector and Amazon Fire tablet were analysed using Kaleidoscope Pro software. The program can help to confirm the identification of the different calls recorded to species level using sonograms and power spectra, along with the measurements of a range of variables such as inter-pulse interval, minimum and maximum frequencies and pulse length. Foraging activity or social calling can also be identified in this way.

It should be noted that it is not always possible to confirm calls to species level. Pipistrellus sp. and Myotis sp. can usually be separated with a high degree of confidence and it is normally possible to identify pipistrelle bats to species level however, many of the Myotis sp. have similar calls and it is not always possible to confirm identification to species level. This is also the case with Nyctalus/Eptesicus sp., which can again have very similar calls, or for species which echolocate very quietly, such as brown long-eared bats, as it may not be possible to record a strong enough call to confirm the assessment. Any uncertainties in identification are noted in this report.

4.2.6 Survey Conditions and Personnel

Surveys were completed as shown in Table 3. For further information on the team's experience, please visit: https://www.econorth.co.uk/who-we-are/team

Table 3: Survey Personnel

Survey	Date	Survey Leader	Assistant Surveyors
PEA & PBRA	19/12/19	**Sarah Hawes**	Henry Barrett
Otter and Water Vole	21/07/20	**Sarah Hawes**	**Paul McGinn**
Dusk Bat Emergence	21/07/20	**Sarah Hawes**	**Paul McGinn**
*Surveyors in **bold** are licensed to work with bats by Natural England			

Table 4 shows the conditions during the surveys.

Table 4: Survey Conditions

Date	Survey	Sunset/rise (BST)	Start Time (BST)	End Time (BST)	Precipitation	Temp (°C)	Cloud Cover (Oktas)	Wind (Beaufort Scale)
19/12/19	PEA&PBRA	N/A	N/A	N/A	None	11	7/8	1
21/07/20	Otter and Water vole	N/A	N/A	N/A	None	17	7/8	1
21/07/20	Bat Activity	21:28	21:13	22:58	None	14	2/8	1

Any constraints or limitations to the survey are discussed in Section 6.1.

4.3 Assessment

The botanical value of the habitats on site and the value of the site for protected species, as determined through the extended phase 1 habitat survey, were based on the criteria published by the Chartered the Institute of Ecology and Environmental Management (CIEEM) in 2018 (http://www.cieem.net/ecia-guidelines-terrestrial-). Each feature was classified as being as one of the following levels of value:

- International
- National
- Regional/County
- City/District/Borough
- Local
- Low

Examples of different ecological features meeting each of these criteria are outlined in Appendix E.

5. Baseline Conditions

5.1 Desk Study

5.1.1 Designated Sites

There are 19 non-statutory designated sites within 2km of the survey area, including proposed Local Wildlife Sites (LWS) and a Local Geodiversity Site (LGS), the closest of which is the River Don, North Road which lies within 5m of the western site boundary.

The River Don also connects the site to the West Farm Meadow Site of Special Scientific Interest (SSSI) located downstream, therefore without mitigation any pollution from the development works has the potential to impact the designated site. Section 7 specifies mitigation required in order to avoid pollution during the proposed development works.

The non-statutory sites are further described within Appendix I and both statutory and non-statutory designated sites are mapped within Appendix H.

Table 5 shows those designated sites identified through the desk study as lying within 2km of the site boundary.

Table 5: Statutory Designated Sites

Statutory Designated Site	Distance & Direction from Site	Reasons for Designation
West Farm Meadow, Boldon SSSI	Approximately 1.5km north-east of the site.	With an area of 2.8 (ha.) West Farm Meadow, Boldon, is important as one of very few surviving semi-natural hay meadows in the coastal plain between the Rivers Tyne and Tees. Although once widespread such species-rich fields are now severely restricted in distribution because of extensive urbanisation and agricultural intensification. Much of this meadow is characterised by an abundance of great burnet *Sanguisorba officinalis*, a species which, in northern England is indicative of traditionally managed hay meadows. Typically for such meadows sweet vernal-grass *Anthoxanthum odoratum,* crested dog's-tail *Cynosurus cristatus* and Yorkshire-fog *Holcus lanatus* are the dominant grasses. Oxeye daisy *Leucanthemum vulgare*, rough hawkbit *Leontodon hispidus*, cat'sear *Hypochoeris radicata*, bird's-foot-trefoil *Lotus corniculatus*, meadow vetchling *Lathyrus pratensis*, pignut *Conopodium majus*, common sorrel *Rumex acetosa* and yellow rattle *Rhinanthus minor* are among other characteristic herbs which bring colour to the meadow.
Station Burn Local Nature Reserve (LNR)	Approximately 1.5km north of the site.	Station Burn Local Nature Reserve has an area of 12.11 ha. The reserve consists of a mixture of ancient river valley landscapes, industrial history and a reclaimed colliery that, as part of the developing Great North Forest, will mature into the biggest woodland in South Tyneside. Water vole and kingfisher have been recorded at the site. The River Don Valley was the site of a watermill for over 500 years up until 1950 - and the remains of George Stephenson's Pontop Waggonway, built in 1834, can still be seen. After the closure of Boldon Colliery in 1982, the site was used for coal-stocking and subsequently reclaimed by the Council in 1999. Now renamed as 'Colliery Wood', the 30-hectare site is rapidly changing as its 50,000 trees and shrubs mature. A series of ponds holds a multitude of life, including frogs, dragonflies and great diving beetles. The young woodland is ideal for grey partridges and skylarks, but as it grows to maturity it will increasingly attract songbirds like thrushes and warblers.

5.1.2 Protected and Notable Species

A range of protected and notable species were identified through the desk study as having been recorded within 2km of the site boundary within the last 10 years. This includes water vole *Arvicola amphibius*, otter *Lutra lutra*, brown hare *Lepus europaeus*, common pipistrelle *Pipistrellus pipistrellus*, hedgehog *Erinaceus europaeus*, badger Meles meles, Mouse Moth *Amphipyra tragopoginis*, Shaded Broad-Bar *Scotopteryx chenopodiata*, Small Heath *Coenonympha pamphilus*, Dingy Skipper *Erynnis tages*, Wall butterfly *Lasiommata megera* as well as a variety of bird species including Barn Owl *Tyto alba*, Kingfisher *Alcedo atthis*, Bittern *Botaurus stellaris* and Song Thrush *Turdus philomelos*.

No European Protected Species Mitigation Licences were identified within 2km of the site using the 'MAGIC' website (checked 20/12/2019).

Further information is provided in Appendix F.

5.2 Field Survey

5.2.1 Habitats

Habitats within the site were found to be dominated by improved grassland used as permanent pasture, with tall ruderal patches within the pasture. One building is present in the north-east of the survey area, which is in current use as stables, with an associated hard standing access route. The land slopes towards the river with scattered mixed deciduous trees bordering the majority of the watercourse. Hedgerow and fences border most of the site. Such habitats are described in the following sub-sections. The results of the habitat survey are shown in Appendix B, with Target Notes provided in Appendix C and site photographs in Appendix D.

Improved Grassland

The majority of the site comprises improved grassland divided into paddocks for the use of grazing horses. Perennial ryegrass *Lolium perenne* is dominant, with Yorkshire fog *Holcus lanatus* and cock's-foot *Dactylis glomerata* also present. White clover *Trifolium repens* and buttercup *Ranunculus* species were also noted.

Tall Ruderal

Patches of tall ruderal vegetation are present across the fields, some of which had been recently cut at the time of the survey.

Scattered Trees / Scrub

A variety of species of mature broad-leaved trees and scrub are present along the river including snowberry *Symphoricarpos albus*, willow *Salix* sp., and hawthorn *Crataegus monogyna*. There are stands of small hawthorn trees in the northern section of the site.

Hedgerow

There is a species-poor managed hawthorn hedge with ivy along the northern border of the site.

Fences

Wooden fencing with barbed wire is used on the majority of the site boundary and to divide the pasture into sections. The northern section of the site is divided into a stables area and two smaller paddocks.

Hard Standing

Hard standing is present at the northern entrance of the site however, this has been encroached by grassland. There is also hard standing immediately to the west of the stables.

5.2.2 Schedule 9 Plant Species

Himalayan balsam *Impatiens glandulifera* was recorded on site, as well as one area of giant hogweed *Heracleum mantegazzianum*. The distribution of both species is shown within Appendix K.

5.2.3 Protected and Notable Species

Bats

Habitat

The habitat on site is considered suitable for bats, the scattered trees and hedgerow providing good foraging and commuting opportunities and providing connectivity to the wider landscape. The pasture also provides foraging habitat for bats.

Building

The results of the Preliminary Bat Roost Assessment of the stables is included in Table 6, below.

Table 6: Preliminary Bat Roost Assessment

Building 1	Description
Overview	A single-storey red brick stable building with an extension to the south-west is situated within the north-eastern section of the site. The extension is predominantly made of metal corrugated sheeting for the walls, the roof a mixture of corrugated metal, corrugated plastic and wooden boarding. The building is currently being used to stable the horses and store hay. The main building is divided into four stalls, once of which was locked at the time of survey, preventing access, based on the external inspection, it was assumed to be in the same style and structure as the neighboring stalls. The extension is divided into two sections. The stables doors are located on the north-western aspect of the building (refer to photo 5, Appendix D).
External	The brickwork is in good condition, as is the corrugated metal roof of the main structure. There are **fascia boards** along part of the eastern and northern aspect. The fascia board on the northern aspect is hanging away from the building, whereas the fascia boarding on the eastern aspect of the building is still in place, with a small gap underneath as it lifts away from the wall, providing a potential roost feature (refer to photos 8 and 9, Appendix D). Currently the roosting features under the fascia boards are heavily cobwebbed suggesting that the feature is not in use by bats however, due to the time of year, bats would be expected to be hibernating and not using these features until spring/summer; conditions within this area were not considered to be suitable for hibernation use. There are **two gaps** within the wall which lead into a small cavity between the brickwork (refer to photo 9, Appendix D). The gaps are approximately 1.5cm in diameter and would provide sufficient access for a potential roosting feature. These features are approximately 1.75m in height. No evidence of bats was recorded during the external inspection. There is a **bird box** on the north-eastern aspect of the building (refer to photo 7, Appendix D).
Internal	The stables are open to the corrugated metal roof with wooden beams across the ceiling. There is light egress from where the metal roof sits on the back wall of the building, providing potential access for bats however, there are no

Building 1	Description
	suitable roosting features within any of the stalls apart from the most south-western room of the main building. Along the south-western wall there is a damaged brickwork has created a gap where the wall meets the roof providing access into the building as well as access into a wall cavity (Refer to photo 12 in Appendix D). As the feature is within the building it provides some shelter from the elements and potentially more stable conditions. However, the feature is likely to provide roosting opportunity for only individual or small numbers of bats. Debris is present on the bricks near the feature however, no evidence of bats was recorded which would be expected if there had been large numbers of bats using the feature in recent years. No evidence of bats was recorded during the internal inspection.
Results	The potential roosting features within the building are considered to be of **low suitability** for roosting bats. There is a low, residual risk of bats using the building for hibernation within the wall cavity features.

Scattered Trees

Where the trees were located next to the river the inspection was limited due to accessibility and health and safety concerns. The line of trees along the river on the site are considered to range from **negligible to low** bat roosting suitability. Refer to photos 17, 18, and 19 in Appendix D.

The stand of hawthorn trees were found to have superficial features which currently do not provide potential roosting features however, these may have the potential to provide roosting opportunities in the future (refer to photo 10, Appendix D).

Bat Activity Surveys

The majority of the calls recorded during the survey were from commuting and foraging common pipistrelles, with the first recording at 21:46 (18 minutes after sunset), indicating the presence of a roost in the local area. Moderate levels of common pipistrelle foraging activity were recorded, with some activity around the western and southern sides of the building as well as commuting over the building in different directions. A single *Myotis* sp. was also recorded during the survey. No bats were recorded emerging from or entering the structure during the survey.

A small number of trees in full leaf obscured the features on the northern aspect of the building; these features were instead fully inspected with a clulite and endoscope immediately prior to the dusk emergence survey. No evidence of bats was recorded.

Great Crested Newts

The improved grassland and tall ruderal vegetation on site is considered to be broadly suitable for the terrestrial phase of great crested newt's lifecycle however, there are no suitable breeding ponds recorded within 500m of the site. Both the River Don (which is unsuitable breeding habitat), immediately to the west of the site and the A184 to the south are considered a barrier to amphibian movement.

Although smooth newt *Lissotriton vulgaris* and palmate newt *Lissotriton helveticus* have been recorded within 2km of the site, there are no known records of great crested newt within this area from the past 10 years. The species is therefore not considered further in this report.

Otter

Otter have been recorded within the 2km of the site along the River Don, and there are three records of otter immediately adjacent to the northern boundary of the site. The habitats on the site boundary that include scattered trees, tall ruderal vegetation and improved grassland are considered suitable for otters to use for foraging purposes and commuting. Whilst no signs of otter were recorded during the PEA and there are no suitable locations for holts or couches on the site, the species-specific survey confirmed

the species commutes along the section of the River Don which runs immediately adjacent to the site. Fresh otter footprints and spraints were recorded on the eastern bank within the southern section of the site. Further evidence of otter was recorded along the western boundary of the site and along the River Don to the north and south of the site. Details of the survey results are shown within Appendix K.

Reptiles

No reptiles are known to have been recorded within 2km of the site. Habitats on site are considered suboptimal for reptiles due to the lack of cover, poor foraging opportunities and disturbance levels associated with the current use of the site.

Water Vole

Records of water vole were provided from immediately adjacent to the south-western area of the site, along the River Don.

Two probable water vole burrows were noted along the bank of the River Don during the initial survey (refer to photos 15 and 16, Appendix D and Target Notes 3 and 4, Appendix C). During the subsequent species-specific survey, five confirmed water vole burrows with water vole footprints were recorded along the eastern bank within the southern section of the site. Further potential water vole burrows and footprints were recorded along the western section of the site on the eastern bank of the River Don. Details of the survey results are shown within Appendix K.

Red Squirrel

The majority of trees on site are hawthorn *Crataegus monogyna* with the occasional mixed deciduous trees along the bank to the south of the site, such as willow *Salix* sp. Due to the species composition and relatively low levels of cover, these are considered insufficient to support a population of red squirrel. There are more mature stands of trees immediately adjacent to the site to the west and to the south, which may be more suitable, therefore red squirrel may pass through the site on occasion in the event that a population persists in the local area.

Badger

The sloped ground and improved grassland which dominate the site are considered to provide suitable sett building and foraging habitat for badger. The species-specific survey identified a small potential badger sett on the western side of the river, off-site. The vegetation coverage over the entrance suggests that the sett is currently not in use.

A badger was recorded on site during the bat activity survey, at 22:05, 37 minutes after sunset within the field near the stable.

Birds

Magpie *Pica pica*, Blackbird *Turdus merula*, Robin *Erithacus rubecula*, Carrion Crow *Corvus corone*, Great Tit *Parus major*, Wren *Troglodytes troglodytes* and Long-tailed tits *Aegithalos caudatus* were recorded on site during the survey. The Magpies, Blackbirds and Carrion Crows were recorded foraging in the fields, while the Robin and Long-tailed Tits were recorded within the hawthorn bushes located in the northern section of the site.

Barn Owl *Tyto alba* have been recorded within 2km of the site however, the stable is considered unsuitable for use by the species due to a lack of suitable internal structures for nesting and roosting, and high levels of use / disturbance of this area, while the close-cropped grassland across much of the site provides sub-optimal foraging opportunities for the species.

There is a bird box on the northern aspect of the building.

Migratory Fish

The River Don has the potential to support migratory fish, such as brown trout. Although the river is outside of the site boundary, indirect impacts must be avoided during the proposed works and lifetime of the development.

BAP and Other Species

The habitats present on site are considered suitable for hedgehogs and brown hare, as well as a small range of locally common *Lepidoptera*.

The site is not within the distribution range of white-clawed crayfish *Austropotamobius pallipes* therefore this species has not been considered further within this report.

6. Interpretation and Discussion

6.1 Survey Constraints and Further Survey Requirements

The initial survey was undertaken in December, at a time of year when some vegetation had died back, meaning that a number of plant species may not have been apparent at this time. The additional surveys were carried out in July 2020, allowing plant species (including invasives) to be identified during the optimum months. Based on the nature of the habitats recorded and the completion of additional site visits during the peak growing season, the timing of the initial survey is not considered to represent a constraint to the assessment.

Based on the current proposals and the work completed to date, no further surveys are considered to be necessary at this time.

6.2 Assessment of Value

Based on the results of the desk study and field work completed to date, the ecological interests of the site are valued as shown in Table 7, below, using the criteria outlined in Section 4.3 and Appendix E.

Table 7: Value of Ecological Features Recorded on Site

Ecological Feature	Ecological Value	Justification
Scattered trees / scrub, hedgerow	Local	The majority of the trees present on site are mature and could not be replaced over a short time period. The majority of the local area consists of residential or arable land therefore the trees, scrub and hedgerow present on site are considered to be of local importance.
Improved Grassland	Low	The habitats support a small range of locally common species typical of such habitats, which can be readily recreated over a short time period.
Tall Ruderal		
Invasive species	N/A	Himalayan balsam and giant hogweed recorded on site.
Bats	Low - Local	Site used for foraging and commuting purposes by small numbers of locally common bat species, although the open nature of the pasture reduces the suitability of much of the site for pipistrelle bats. No roosts recorded, with alternative roosting opportunities present throughout the surrounding residential areas
Otter	Local	Small section of the River Don present adjacent to the site, along which the local otter population commute and potentially forage. This section is too small in itself to support an individual otter, but will form part of a wider network of habitat used by the local population. Pasture which dominates the site is largely unsuitable for otter due to its open and exposed nature. No rest sites recorded during the surveys
Water Vole	Local	Small section of the River Don adjacent to the site is used for commuting, shelter and feeding by the local water vole population. Small section of suitable habitat adjacent to the site will form part of a wider network of habitat used by the species, although the dominant habitats across the site (pasture) are largely unsuitable for water vole
Badger	Local	Site provides a small area of habitat suitable for use by foraging badger, with larger areas of higher value habitat present in the surrounding area. No setts recorded on site, with a single, likely inactive outlier identified on the western side of the River Don

Ecological Feature	Ecological Value	Justification
Birds	Local	A range of bird species was recorded on site. The hawthorn, hedgerow and trees along the river provide foraging and nesting opportunities for a small range of locally common bird species. The pasture also provides further foraging opportunities for the local bird population.

6.3 Input into the Design Process

In order to minimise the potential impacts of the proposals upon the key ecological interests of the site, namely breeding birds, water voles, otters and bats, the proposals will ensure:

- The hawthorn trees on site are retained where possible due to the nesting and foraging value for birds. If these trees were to be removed, they should be replaced like for like in an appropriate location on site in order to reduce the impact on local populations of bird species
- The hedgerows along the boundaries of the site should be retained due to their value to foraging, commuting and nesting bird species
- An appropriate lighting strategy will be implemented in order to ensure there are no issues resulting from light spill along the River Don and riparian corridor
- The trees along the boundary bordering the River Don will be retained due to the value of their root systems in bank stability and reducing erosion. The trees were also assessed as providing some (low) potential for roosting bats
- Permeable material should be considered within the design of the road network in order to allow drainage of rainwater to slowly permeate into the soil reducing the risk of runoff into the River Don and flooding caused by standard impermeable materials
- As shown in Figure 2, by restricting the building footprint and retaining the flood plain adjacent to the River Don this will reduce the impact on the local wildlife including protected species such as otter and water vole present here.
- The development should not encroach within 10m of the river bank in order to ensure that water vole are not disturbed during the construction process.

6.4 Impact Assessment

Based on the proposals as shown in Figures 2 and 3, the development may have the following impacts upon the ecological interests of the site in the absence of mitigation:

- The loss or disturbance of habitats of no more than local botanical value, and primarily comprising habitats of low value
- The harm or disturbance of any protected species present on site at the time of works
- The loss or temporary disturbance of habitats of local value to local populations of breeding birds

- The loss or temporary disturbance of habitats of low value to local populations of badgers
- The loss or disturbance of habitats of local value to local populations of otter and water vole
- The pollution, damage and loss of habitat along the River Don
- Potential impacts to migratory fish within the River Don
- Potential impacts to the West Farm Meadow SSSI, located off site, via impacts upon the River Don
- Increased risk of predation of local wildlife, including protected species such as water vole, due to the potential presence of increased numbers of domestic cats following on from the occupation of the new residential properties

7. Mitigation and Compensation Strategy

The following measures will be implemented in order to minimise the ecological impacts of the proposals, including the risk of protected species being adversely affected:

- All hedgerows will be retained and subject to an appropriate management regime throughout the lifetime of the development
- All trees along the River Don (along the southern and northern border) will be retained
- If the scattered trees consisting of hawthorn are to be removed, then they must be replaced with locally appropriate native species on a 1:1 basis in an appropriate location on site
- Due to the confirmed presence of water vole and otter along the watercourse, and badger in the local area, works will proceed to a Construction Environmental Management Plan (CEMP) and update surveys will be required prior to the works commencing, to ensure conditions on site have not changed in the interim
- A 5-year management plan will be required in order to effectively manage and enhance the area retained between the River Don and the development for local wildlife.
- Works will not commence until those contractors involved in site clearance and construction works have received a toolbox talk from a Suitably Qualified Ecologist, to ensure they are aware of the presence of protected species in the area, and the working methods which must be followed as a result

- Vegetation clearance and building works will not be undertaken during the bird nesting period (March – August inclusive) unless a checking survey by a Suitably Qualified Ecologist (SQE) has been undertaken within the five days prior, which confirms that no active nests are present. In the event a nest is identified, the SQE will implement a buffer zone around the nest into which no works will progress until the SQE confirms the nest is no longer active
- Checking surveys for badger will be completed within the month prior to the start of works, to address the residual risk of such species being adversely affected by the proposals. In the event any setts are identified at this time, works using heavy machinery within 30m, light machinery within 20m, or hand tools within 10m will not be permitted unless a licence is first obtained from Natural England
- Tree protection measures will be implemented throughout the works period around those features to be retained and those trees which border the site to the east. This will include ensuring no materials are stockpiled or vehicles are parked within the Root Protection Zones around each tree
- No fires will be lit on site as part of the proposals
- Where any trenches/excavations greater than 0.5m deep are created these will be closed overnight where possible. Alternatively, one side will be cut at no more than a 45° angle, or a plank large enough for a person to walk up will be installed overnight to provide any wildlife which may fall in with an escape route. All such excavations will be checked for wildlife prior to the recommencement of works each morning
- No works will be undertaken between sunset and sunrise to minimise the risk of nocturnal species such as badger or bats being adversely affected
- In order enhance the habitat present on site for roosting bats it is recommended that six bat boxes (Schwegler 2F or similar) are installed on-site within the new building structures or surrounding trees which will be retained as part of the development
- Gaps measuring at least 13 x 13cm will be maintained/created in the existing and any new boundary features, to ensure the habitats remain permeable to a range of wildlife, such as hedgehogs.
- Artificial lighting is proven to negatively impact nocturnal species such as bats. The proposed lighting scheme will avoid any light spill onto key habitat areas which could be utilised by wildlife. A maximum of 2 lux will be allowed within these areas as stated in Guidance Note 8 Bats and Lighting (BCT, 2018). Key areas include:
    - Within 10m of the riverbank

  - Along the hedgerow on the northern and eastern border
  - Along the tree line of the north-eastern border.

- Wildlife sensitive designs are available which direct the light where needed and avoid any unnecessary light spill. The lights will use LEDs which do not emit blue light. Where possible, security lighting should use motion-sensors to reduce the light pollution when not required. For further information refer to Guidance Note 8 Bats and Lighting (BCT, 2018).
- Additional native trees/shrubs to be planted along the north-western border, where there is space along the river, to enhance the foraging opportunities for water vole here, to include: crack willow *Salix fragilis*, white willow *S. alba*, goat willow *Salix caprea,* aspen *Populus tremula,* hazel *Corylus avellana*, field maple *Acer campestre*, rowan *Sorbus aucuparia* and elder *Sambucus nigra*.
- Any brash/timber piles created will be situated in the retained areas of habitat for use as shelter by hedgehogs or other mammals. If brash/timber piles are left or are present on site, these will be checked by hand in order to determine that no hedgehogs or other protected or notable species are sheltering within before mechanical movement.
- Given the potential for increases in visitor pressure on coastal European sites a financial contribution should be agreed in line with South Tyneside Supplementary Planning Document in order to mitigate potential effects on European sites (South Tyneside Council, 2018).
- Bird boxes to be incorporated into 25% of the buildings on site. To include a selection of box types designed for House Sparrow *Passer domesticus*, Starling *Sturna vulgaris*, Swallows *Hirundo rustica* and Swifts *Apus apus*. If external boxes are used the box must be made of either WoodStone or WoodCrete as these are more durable and last longer than wooden bird boxes. The boxes must be positioned according to product guidance regarding height and aspect.
- A fence line will be installed between the housing development footprint and the retained flood plain to discourage access by residents and dog walkers.
- No works will be undertaken within 10m of the watercourse.
- Works will proceed under the methodology outlined below in order to prevent pollution of the adjacent watercourse and SSSI further downstream:
  - Chemicals should not be used during the construction work.
  - Ensure sediment/pollution prevention control methods are in place, following current best-practice guidelines:

- Straw bales used where hydrological connections to water bodies off site are identified.
- No refuelling within 30m of any watercourse / waterbody.
- Spill kits available at all times.
- Plant nappies for all plant used on site.
- Sediment barriers will be installed surrounding extensive excavation or vegetation clearance areas.

8. References

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Appendix A – Key Legislation

Table A1: Overview of Key Legislation

Legislation	Key Features
The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (The Habitats Regulations)	The Habitat Regulations transpose *Council Directive 79/409/EEC on the Protection of Wild Birds* (the EC Birds Directive 1979) and *Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna* (the EC Habitats Directive 1992) into UK law. The Birds Directive was amended in 2009, becoming Directive 2009/147/EC. The Habitat Regulations make it an offence (with certain exceptions) to deliberately capture, disturb, kill or trade in those animal species listed in Schedule 2, or to pick, cut, uproot, collect, destroy or trade in those plant species listed in Schedule 4. The EC Birds Directive requires member states to establish and monitor Special Protection Areas (SPAs) for all rare or vulnerable species included in Annex I, as well as for all regularly occurring migratory species, with key focus on wetlands of international importance. Annex I and II of the Habitats Directive respectively list those habitats and species for which a similar network of sites – Special Areas of Conservation (SACs) – must be established and monitored. Collectively, SPAs and SACs form a network of pan-European protected areas which are referred to as 'Natura 2000' sites.
The Convention on the Conservation of European Wildlife and Natural Habitats 1979 (Bern Convention)	The Bern Convention was adopted in 1979 and ratified by the UK Government in 1982. The principal aims of the Convention are to ensure the conservation and protection of all wild plant and animal species and their natural habitats (listed in Appendices I and II), to increase cooperation between contracting parties, and to afford special protection to the most vulnerable or threatened species (including migratory species). Members of the European Community meet their obligations via the Birds Directive and the Habitats Directive. These are transposed into UK law by the Wildlife and Countryside Act 1981 (as amended), Nature Conservation (Scotland) Act 2004 (as amended), Wildlife (Northern Ireland) Order 1985, and the Nature Conservation and Amenity Lands (Northern Ireland) Order 1985.

Legislation	Key Features
The Wildlife and Countryside Act 1981 (as amended)	The Wildlife and Countryside Act consolidates and amends existing national legislation to implement the requirements of the Bern Convention and the Birds Directive throughout Great Britain. The Act is the primary UK mechanism for the designation of statutory ecological sites - Sites of Special Scientific Interest (SSSIs) - and the protection of individual species listed under Schedules 1, 2, 5, 6 and 8 of the Act, each of which is subject to varying levels of protection. Schedule 9 of the Act also lists those plant species which it is an offence to plant or otherwise cause to grow in the wild, while Schedule 14 prevents the release into the wild or sale of certain plant and animal species which may cause ecological, environmental or socio-economic harm.
Natural Environment and Rural Communities Act 2006	The NERC Act places a duty on public bodies to consider and conserve biodiversity through the exercise of their functions and includes a range of measures to strengthen the protection of both habitats and wildlife. The Act makes provision in respect of biodiversity, pesticides harmful to wildlife, protection of birds and invasive non-native species.
The Countryside and Rights of Way (CRoW) Act 2000	The CRoW Act, which applies to England and Wales only, strengthens the provisions of the Wildlife and Countryside Act 1981 (as amended), both in respect of protected species and statutory ecological sites, the latter primarily relating to the management and protection of SSSIs. It also provides for better management of Areas of Outstanding Natural Beauty (AONBs). The Act places a statutory obligation on public bodies to further the conservation of biodiversity through the exercise of their functions, thereby providing a statutory basis to the Biodiversity Action Plan (BAP) process. Section 74 of the Act lists those habitats and species of principal importance in England.
The Wild Mammals (Protection) Act 1996	This Act provides protection for wild mammals from acts of cruelty. An offence is committed if any person mutilates, kicks, beats, nails, or otherwise impales, stabs, burns, stones, crushes, drowns, drags or asphyxiates any wild mammal with intent to inflict unnecessary suffering.
The Protection of Badgers Act 1992	This consolidates the existing legislation relating to the protection of badgers, and makes it an office in England and Wales to wilfully kill, injure or take a badger (or attempt to do so) and affords protection to both the animals themselves and their setts.

Legislation	Key Features
Hedgerow Regulations 1997	The Hedgerow Regulations are intended to protect important countryside hedgerows from destruction or damage in England and Wales.

Table A2: Overview of Key Protected Species Legislation and Protection

Species	Key Legislation and Protection
Bats	All European bat species are protected in Britain under the Habitat Regulations 2019. All British bat species are included on Schedules 5 and 6 of the Wildlife and Countryside Act 1981 (as amended) and the whole of Section 9 applies to European bat species. The above collectively prohibits the following: • Deliberately or recklessly capturing, injuring, taking or killing of a bat • Deliberately or recklessly harassing a bat • Intentionally or recklessly disturbing of a bat in its place of rest (roost), or which is used for protection or rearing young • Deliberately or recklessly damaging, destroying or obstructing access to any resting place or breeding area used by bats • Deliberately or recklessly disturbing a bat in any way which is likely to significantly affect the local populations of the species, either through affecting their distribution or abundance, or affect any individuals' ability to survive, reproduce or rear young • Possession or advertisement/sale/exchange of a bat (dead or alive) or any part of a bat Bats are also protected by the Wild Mammals (Protection) Act 1996. Licenses are issued by Natural England for any works which may compromise the protection of European protected species, including bats. This license is required irrespective of whether the works require planning permission. Selected species are also listed in the UK BAP.
Great Crested Newt	Great crested newts receive the same levels of protection under British and European law as is afforded to bats (see above). Great crested newts are included on the UK BAP.
Otter	Otter are protected under British and European law, receiving the same level of protection as bats (see above). Otter are also listed as a priority species in Appendix II of the Bern Convention. Otter are included on the UK BAP.
Reptiles	Common reptiles (grass snake, adder, common lizard and slow-worm) receive partial protection under the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to: • Intentionally or recklessly kill or injure these species • Sell, offer or advertise for sale, possess or transport for the purposes of sale these animals, whether alive or dead, or any part thereof In addition, smooth snake and sand lizard are also protected under the Habitat Regulations 2019, which makes it an offence to:

Species	Key Legislation and Protection
	• Intentionally or recklessly kill, injure, capture, disturb or handle these species; • Intentionally or recklessly damage or destroy any place used by these species for shelter, protection, resting or breeding; and • Intentionally or recklessly obstruct access to any place used for shelter, protection, resting or breeding by these species. All 6 species of native reptile are listed on the UK BAP.
White-clawed Crayfish	White-clawed crayfish are partially protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to: • Take white-clawed crayfish • Sell, possess or transport white-clawed crayfish for the purpose of sale • Advertise the buying or selling of white-clawed crayfish The species is also protected under the Habitats Directive, being listed under Annex II and V, and is included on the UK BAP.
Water Vole	Water voles are protected under Schedules 5 and 6 of the WCA 1981 (as amended). This makes it an offence to: • Intentionally kill, injure or take water voles • Possess or control the species • Damage or destroy any place used by water vole for shelter or protection • Disturb water vole while they occupy such places of shelter • Sell, possess or transport water vole for the purpose of sale • Advertise the buying or selling of water vole The species is also protected under the Wild Mammals (Protection) Act 1996 and is listed on the UK BAP.
Red Squirrel	Red squirrels are protected under Schedules 5 and 6 of the WCA 1981, receiving the same level of protection as water vole. The species is also protected under the Wild Mammals (Protection) Act 1996 and listed on the UK BAP.
Badger	Badger are protected under the Protection of Badgers Act 1992, which makes it an offence to: • Knowingly kill, capture, injure or disturb any individual • Intentionally damage or destroy a badger sett, or any part thereof • Obstruct access to an area which is used for breeding, resting or shelter • Disturb a badger while it is using any place used for breeding, resting or shelter The species is also protected by the Wild Mammals (Protection) Act 1996 and receives partial protection through inclusion on Schedule 6 of the Wildlife and Countryside Act 1981 (as amended).
Birds	With the exception of some species listed on Schedule 2, the majority of bird species are protected under the Wildlife and Countryside Act 1981 (as

Species	Key Legislation and Protection
	amended). This makes it an offence to intentionally or recklessly: • Kill, injure or take any wild bird • Take, damage or destroy any nest which is in use or being built • Take, damage or destroy the eggs of any such bird Additional protection against disturbance at the nest is also afforded to any bird species listed on Schedule 1 of the Act. Selected bird species are also listed on the UK BAP.
Migratory Fish	Atlantic salmon and sea trout are protected under the Salmon and Freshwater Fisheries Act 1975, supplemented by the Salmon Act 1986. Both species also listed under the EC Habitats Directive 1992, Annexes IIa and V. All three species of lamprey receive a degree of legal protection, being listed under Annexes IIa and Va of the Habitats Directive. The conservation of species listed under Annex II of the Habitats Directive requires the designation of Special Areas of Conservation. Species listed under Annex V of the Directive are also considered to be of community interest and their taking in the wild and exploitation may be subject to management measures. River and sea lampreys, Atlantic salmon, European eel and brown/sea trout are listed on the UK BAP.

Appendix B – Phase 1 Habitat Map

Figure B1: Phase 1 Habitat Map



Appendix C – Target Notes

Table C1: Target Notes Relating to Figure B1 (see Appendix B)

Number	Description
1	Compost pile
2	Ephemeral standing water
3	Potential water vole burrow 1
4	Potential water vole burrow 2
5	Dead hawthorn to be retained
6	A section of field which has been fenced off and is waterlogged
7	Section of defunct unmanaged hedge

Appendix D – Site Photographs

Photo 1: Northern section of the site overlooking the paddocks and pasture. In a south-westerly direction.	**Photo 2**: Poached pasture. Westerly direction towards the River Don.
	
Photo 3: Pasture field. North-westerly direction towards the River Don.	**Photo 4**: Along the western border where the River Don meets the site boundary.
	

Photo 5: Stable building within the north-eastern section of the site.	**Photo 6:** Gaps beneath boarding on the northern corner of the stables.
	
Photo 7: Bird box on the northern aspect of the wall of the stables.	**Photo 8**: Lifted fascia boarding on the south-eastern aspect of the building.
	

Photo 9: South-eastern aspect of the stables with two holes leading into wall cavity.	**Photo 10**: Group of Hawthorn trees to the north-west of the stables.
	
Photo 11: Internal structure of the stables	**Photo 12**: Potential bat roosting feature on the southern aspect of the main stable building.
	

Photo 13: Tall ruderal within pasture. Line of trees in background along north-eastern boundary.	**Photo 14**: The River Don along the western boundary.
	
Photo 15: Potential water vole burrow on riverbank.	**Photo 16:** Potential water vole burrow on riverbank.
	

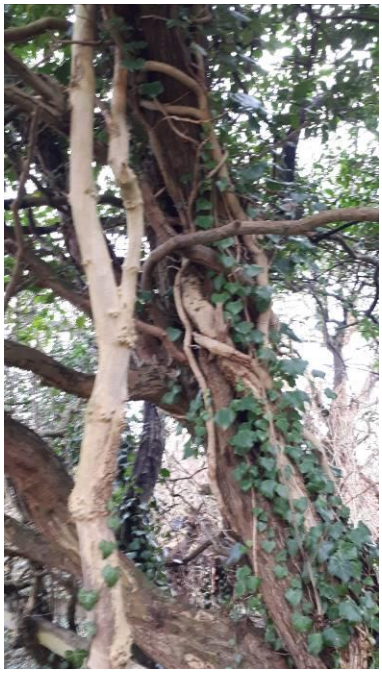
Photo 17: Trees along riverbank.	**Photo 18:** Trees along riverbank.
	
Photo 19: Trees along riverbank.	**Photo 20:** Southern corner of the site – waterlogged and fenced off.
	

Photo 21: Himalayan balsam present on site (Target Note 12, Appendix K)	**Photo 22:** Water vole burrows along eastern bank of the River Don (Target Note 1, Appendix K)
	

Appendix E – Value of Ecological Receptors

Table E1: Examples of Ecological Receptors of Differing Value

Value	Examples
International	• An internationally designated site or candidate site (SPA, pSPA, SAC, cSAC, pSAC, Ramsar site) or an area which meets the designation criteria for such sites. • Internationally significant and viable areas of a habitat type listed in Annexe 1 of the Habitats Directive, or smaller areas of such habitat, which are essential to maintain the viability of a larger whole. • Any regularly occurring, globally threatened species. • A regularly occurring population of an internationally important species, which is threatened or rare in the UK, of uncertain conservation status • A regularly occurring, nationally significant population/number of any internationally important species.
National	• A nationally designated site (e.g. SSSI, NNR) or a discrete area which meets the published selection criteria for national designation (e.g. SSSI selection guidelines) irrespective of whether or not it has yet been notified. • A viable area of a UK BAP priority habitat, or smaller areas of such habitat which are essential to maintain the viability of a larger whole. • A regularly occurring significant number/population of a nationally important species e.g. listed on the Wildlife and Countryside Act 1981 (as amended). • A regularly occurring population of a nationally important species that is threatened or rare in the county or region. • A feature identified as being of critical importance in the UK BAP.
Regional/County	• Viable areas of key habitat identified in the Regional or County BAP or smaller areas of such a habitat, which are essential to maintain the viability of the larger whole. • Regional/county significant and viable areas of key habitat identified as being of regional value in the appropriate English Nature (now Natural England) Natural Area. • A regularly occurring significant population/number of any important species important at a regional/county level. • Any regularly occurring, locally significant population of a species which is listed in a Regional/County Red Data Book or BAP on account of its regional rarity or localisation. • Sites of conservation importance that exceed the district selection criteria but that fall short of SSSI selection guidelines.
City/District/Borough	• Areas of habitat identified in a District/City/Borough BAP or in the

Value	Examples
	relevant Natural Area profile. • Sites that the designating authority has determined meet the published ecological selection criteria for designation, including Local Nature Reserves selected on District/City/Borough ecological criteria. • Sites/features that are scarce within the District/City/Borough or which appreciably enrich the District/City/Borough habitat resource. • A diverse and/or ecologically valuable hedgerow network. • A population of a species that is listed in a District/City/Borough BAP because of its rarity in the locality or in the relevant Natural Area profile because of its regional rarity or localisation. • A regularly occurring, locally significant number of a District/City/Borough important species during key phases of its life cycle.
Local	• Areas identified in a Local BAP or the relevant natural area profile. • Sites/features which area scarce in the locality or which are considered to appreciably enrich the habitat resource within the local context, e.g. species-rich hedgerows. • Local Nature Reserves selected on Parish/Local ecological criteria. • Significant numbers/population of a locally important species e.g. one which is listed on the Local BAP. • Any species, populations or habitats of local importance.
Low	• Habitats of moderate to low diversity which support a range of locally and nationally common species, the loss of which can be easily mitigated.

Appendix F – Protected and Notable Species Identified by the Desk Study

Table F1: Protected Species Records within 2km

Species	Number of Records	Most Recent Record	On Site?	Level of Protection		
				HR 2019	WCA 1981	NERC /UK BAP
European Water Vole	64	2017	No (adjacent)	☐	☒	☒
European Otter	46	2016	No (adjacent)	☒	☒	☒
Brown Hare	10	2011	No	☐	☐	☒
West European Hedgehog	46	2018	No	☐	☐	☒
Bats (unidentified)	3	2014	No	☒	☒	☒
Common pipistrelle	8	2017	No	☒	☒	☐
Eurasian Badger	3	2014	No	☐	☐	☐
Mouse Moth	1	2010	No	☐	☐	☒
Shaded Broad-Bar (moth)	1	2010	No	☐	☐	☒
Small Heath (butterfly)	61	2017	No	☐	☐	☒
Dingy Skipper (butterfly)	137	2017	No	☐	☐	☒
Wall (butterfly)	5	2015	No	☐	☐	☒
Little Bittern	1	2010	No	☐	☒	☐
Barn Owl	3	2010	No	☐	☒	☒
Long-eared Owl	3	2010	No	☐	☒	☐
Reed Bunting	4	2017	No	☐	☐	☒
Kingfisher	6	2013	No	☐	☒	☐
Greenshank	1	2011	No	☐	☒	☐
Curlew	39	2011	No	☐	☐	☒
Lapwing	45	2011	No	☐	☐	☒
Skylark	3	2011	No	☐	☐	☒
Song Thrush	3	2017	No	☐	☐	☒

Species	Number of Records	Most Recent Record	On Site?	Level of Protection		
				HR 2019	WCA 1981	NERC /UK BAP
Yellowhammer	23	2011	No	☐	☐	☒
Grey Partridge	119	2011	No	☐	☐	☒
House Sparrow	21	2017	No	☐	☐	☒
Grasshopper Warbler	2	2010	No	☐	☐	☒
Peregrine	1	2011	No	☐	☒	☐
Little Ringed Plover	1	2011	No	☐	☒	☐
Lesser Redpoll	9	2011	No	☐	☐	☒
Bittern	1	2010	No	☐	☒	☒
Common Toad	7	2015	No	☐	☐	☒
Palmate Newt	10	2012	No	☐	☒	☐
Smooth Newt	129	2012	No	☐	☒	☐
Common Frog	17	2016	No	☒	☒	☐

Key

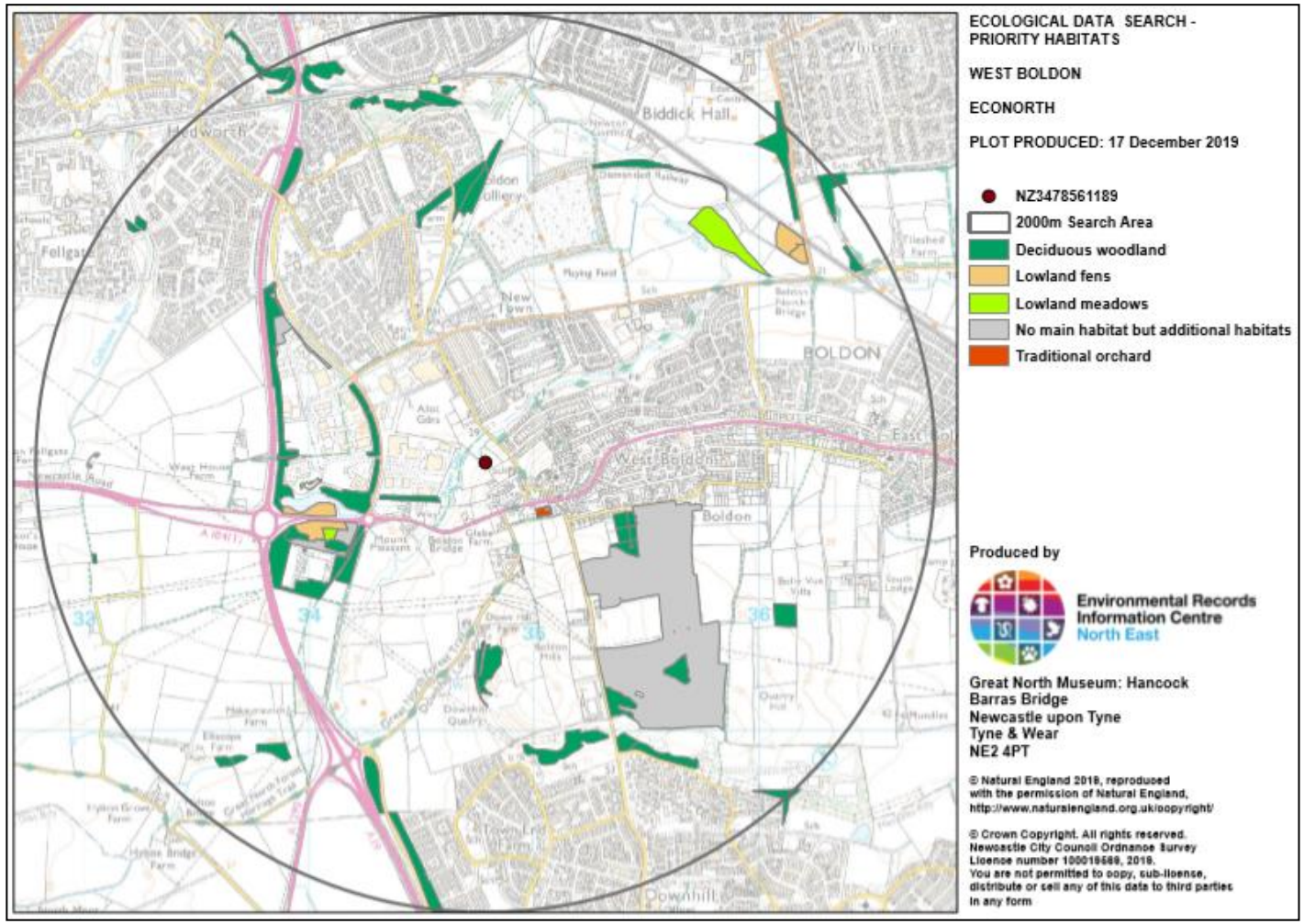
HR 2019 – The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019

WCA 1981 – The Wildlife and Countryside Act 1981 (as amended) (Bird species listed relate solely to those included on Schedule 1)

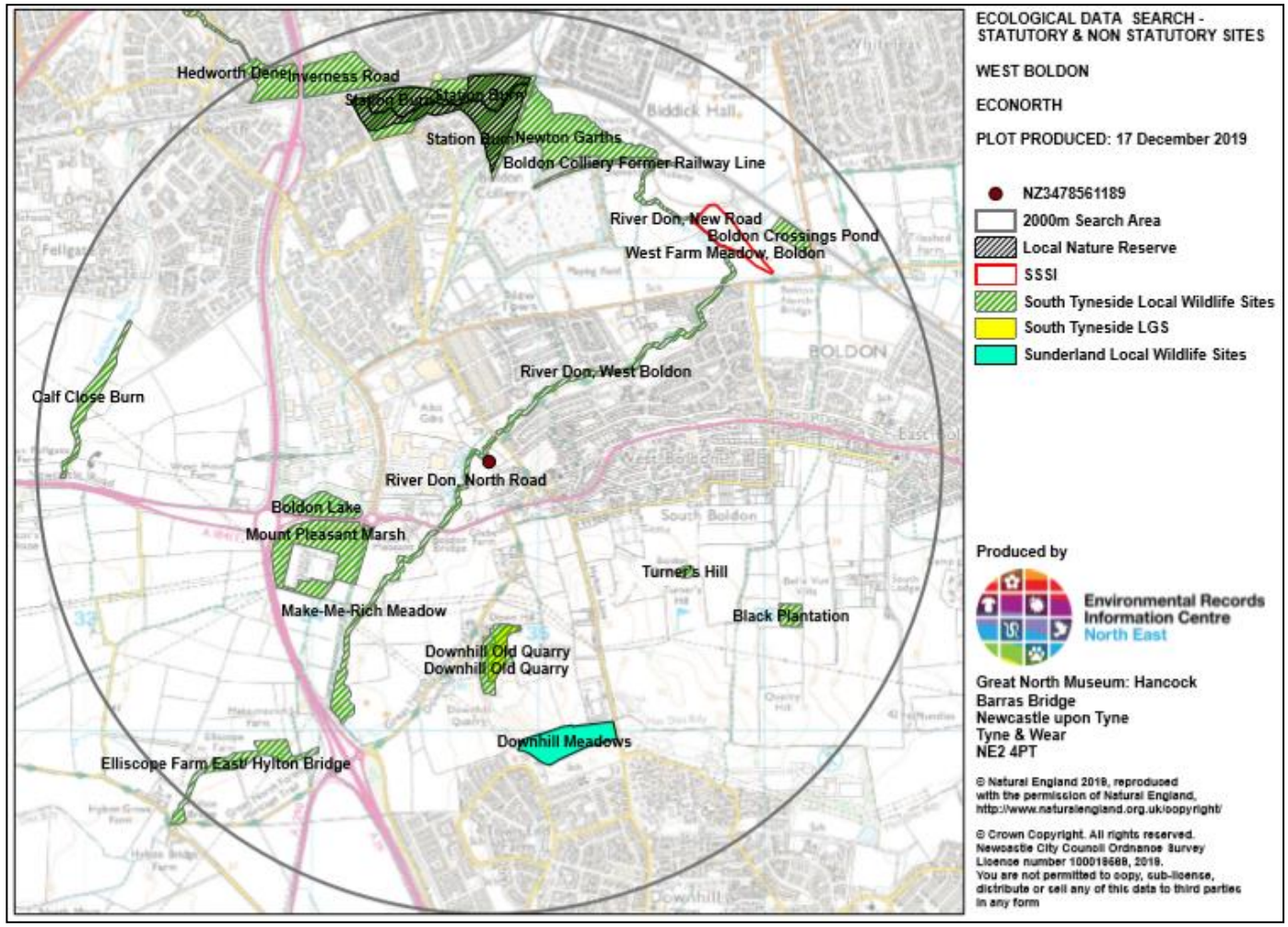
NERC – The Natural Environment and Rural Communities Act 2006

UK BAP – UK Biodiversity Action Plan

Appendix G – Priority Habitats Map



Appendix H – Statutory and Non-Statutory Sites



Appendix I – Description of Non-Statutory Designated Sites

Non-Statutory Designated Site	Distance & Direction from Site	Site Information
11 Downhill Meadows LWS	Located approximately 1.5km to the south of the site.	The calcareous grassland includes species such as greater and common knapweed, field scabious, yellow-rattle, agrimony, eye-bright, pepper-saxifrage, fairy-flax, burnet saxifrage and autumn gentian with musk thistle on areas of disturbed ground. Common blue and meadow brown butterflies are found here. Small areas of rank grassland consist of species such as cock's foot, false oat-grass, creeping thistle, hogweed and nipplewort. These are of value to invertebrates and small mammals in particular and will probably attract birds of prey, such as kestrel to the site. Oak, birch, field maple, white poplar, hazel, holly, guelder rose, and willow have been planted in blocks around the SNCI. These are largely native species of great value to wildlife. There are some scattered hawthorn, ash seedlings and small areas with brambles
Black Plantation LWS	Located approximately 1.5km to the south-east of the site.	Black Plantation is a small, rectangular, area of mature even-aged, broadleaved plantation woodland lying to the south of West Boldon. The canopy is dominated by sycamore, whilst other trees present include wych elm, beech, ash and hybrid poplar. The ground flora has no ancient woodland indicators, being dominated by plants such as bramble, stinging nettle, false oat-grass and umbellifers. A diverse bird life includes jays and breeding great spotted woodpecker, whilst barn owl have been recorded using the wider area. The site was surveyed for white-letter hairstreak butterfly in 2007. Whilst no evidence of the butterfly was found the habitats present were judged to be suitable to sustain a colony of this UK Biodiversity Action Plan Priority Species. The plantation is surrounded by arable fields, but has some connectivity with other habitats via linking hedgerows. It falls within a wildlife corridor (as defined by the council's LDF). The woodland at Downhill Old Quarry is 1.3 km to the west whilst the plantations at Belle Vue Villa (Ordnance Survey first Edition) are 140 meters to the east. Sites qualify as a Local Wildlife Site if they contain significant areas of one or more priority habitats as defined in the Durham Biodiversity Action Plan. Black Plantation qualifies because it consists of broadleaf woodland, which is listed as a priority habitat. The definition of broadleaf woodland is 'all woodland which is not ancient (established since 1600) and which contains predominantly broadleaf species. This includes plantation as well as semi-natural or secondary woodland.' To qualify as a Local Wildlife Site a minimum area of 2 hectares of this habitat would normally be required. Black Plantation is only approximately 1 hectare in extent but has nevertheless been selected: a) Because it is probably the best example of mature woodland in South Tyneside, dating as it does from the 19th

Non-Statutory Designated Site	Distance & Direction from Site	Site Information
		Century (it is recorded as already being an established plantation on the Ordnance Survey Second Edition map of 1896). b) On the basis of its rarity as a habitat in South Tyneside it was recommended for Local Wildlife Site status by an independent ecologist, Dr Moira Owen, in a survey of 1998. c) It could be described as a 'stepping stone' between the woodlands at Downhill Old Quarry and Belle Vue Villa, for which the minimum size threshold is 1 ha.
Boldon Colliery Former Railway Line LWS	Located approximately 1.5km to the north of the site.	A length of disused railway embankment, formerly part of the North Eastern Railway Boldon and Newton Garths Branch, which dates from at least 1855 (OS First edition). Situated to the north and east of Colliery Wood it supports unimproved neutral grassland, mature scrub, scattered trees and wet ditch communities. The grassland has a variety of plants characteristic of base-rich railway ballast such as common knapweed, perforate St John's wort, hawkweed and silver hairgrass. The scrub comprises hawthorn, elder, bramble and gorse. Recorded bird use includes yellowhammer, blackcap, whitethroat and willow warbler, with fieldfare and redwing during the winter. The site is also an important area for wintering long-eared owls. Boldon Colliery Former Railway Line qualifies as a Local Wildlife Site because it has: a) Scrub, as defined in the Durham Biodiversity Action Plan i.e. 'scattered or dense stands of naturally regenerating locally native tree and shrub species, generally under 5m tall'. To qualify as a Local Wildlife Site on the basis of scrub alone a minimum area of 1.5 hectares of this habitat would normally be required. b) Lowland meadows and pasture as defined in the Plan. To meet the definition a minimum of two species must be recorded as frequent and a further two as occasional from a given list of indicator species. The most recent survey of 1999 did not include an assessment of abundance but the following plants from the list were all recorded: Field scabious, Meadow vetchling, Birds-foot trefoil, Great burnet and Tufted vetch. Whilst the area of scrub falls below the qualifying minimum of 1.5 hectares, it is considered that on the basis of the presence of the species rich grassland habitat (as referred to in b) above) and the presence of valuable wet ditch habitats, all in the context of the archaeological setting, the site should be designated as a Local Wildlife Site.

Non-Statutory Designated Site	Distance & Direction from Site	Site Information
		The site was designated as a Site of Nature Conservation Importance in the Unitary Development Plan (1999). It is proposed that an equivalent status is retained but that the name is changed to Local Wildlife Site, in keeping with Government guidance
Boldon Crossings Pond LWS	Located approximately 1.5km to the north-east of the site.	This is a pond, surrounded by marsh, adjacent to the railway near the level crossings north east of West Boldon, it almost certainly owes its origin and character to the rather impermeable underlying Pelaw Clay. The pond margins support dense stands of tall emergent vegetation, with reedmace, greater pond-sedge, lesser pond sedge, great hairy willowherb and yellow iris. There are also areas of shorter vegetation, with jointed rush, lesser spearwort, fool's water cress and celery leaved crowfoot. The open water supports species such as common water starwort, common and ivy-leaved duckweed, water cress, common water crowfoot and horned pondweed. Around the pond margins damp grassland dominated by creeping bent also holds floating sweet-grass and soft rush. Beyond this is an area with plants typical of drier, neutral grasslands such as tufted vetch, meadow vetchling and common restharrow. Snipe regularly winter, duck species such as Teal use the pond and breeding birds include moorhen and reed bunting. Boldon Crossings Pond qualifies as a Local Wildlife Site because it has: a) A pond, as defined in the Durham Biodiversity Action Plan i.e. 'a temporary or permanent water body between 5 square metres and two hectares in surface area, which holds areas of open water at least part of the year. The definition excludes garden ponds.' In addition South Tyneside Council has adopted the definition for ponds of high value from DEFRA Higher Level Stewardship Farm Environment Plan, WO7, which requires that they should 'Contain at least 15 naturally occurring, floating, submerged, and/or marginal plants and/or support high value species of plant or animal.' The description above lists 17 species of naturally occurring, floating, submerged, and/or marginal plant. b) An area of lowland meadow and pasture which, on its own, would not justify Local Wildlife Site status but which nevertheless forms a valuable component of the overall site. Boldon Crossings Pond was designated as a Site of Nature Conservation Importance in the Unitary Development Plan (1999). It is proposed that an equivalent status is retained but that the name is changed to Local Wildlife Site, in keeping with Government guidance

Non-Statutory Designated Site	Distance & Direction from Site	Site Information
Boldon Lake LWS	Located within 1km to the south-west of the site.	The site comprises a man-made lake (the largest body of open water in the borough) adjacent to the Quadrus building in West Boldon, together with species-rich damp grassland alongside. The lake was created in 1986 and has developed substantial areas of marginal vegetation including large stands of reedmace and common reed, and an area dominated by hard rush. Colonies of Australian swamp stonecrop have recently been discovered in various locations around the margins. The lake is well used by waterfowl including mute swan, mallard, coot, moorhen and grey heron. Reed warbler bred in 2006, the only current site for the species in the borough. The lake is also used by at least five species of dragonfly/ damselfly including emperor dragonfly and four-spotted chaser. It is stocked with coarse fish by a local angling club. The area to the south of the lake is a remnant of exceptionally rich, damp ridge and furrow grassland. The ridges hold species-rich neutral grassland communities with cowslip, pepper saxifrage, ladies bedstraw and adders tongue fern. The damp furrows are populated by water areas, hemlock, water drop-wort and northern marsh orchid. This is a rare habitat in north east England and was identified by Claire and John O'Reilly in 2009 as being closely related to MG4 grassland. MG4 is one of only two types of mesotrophic (neutral) grassland in Britain listed as an Annex 1 habitat under the European Habitats Directive. Boldon Lake qualifies as a Local Wildlife Site because it has: a) pond, as defined in the Durham Biodiversity Action Plan (see text box). In addition South Tyneside Council has adopted the definition for ponds of high value from DEFRA Higher Level Stewardship Farm Environment Plan, WO7, which requires that they should 'Contain at least 15 naturally occurring, floating, submerged, and/or marginal plants and/or support high value species of plant or animal.' Recent surveys of Boldon Lake have revealed the presence of at least 19 species of such plants. b) More than 0.5 hectares of lowland meadow and pasture as defined in the Durham Biodiversity Action Plan. To meet the definition a minimum of two species must be recorded as frequent and a further two as occasional from a given list of indicator species. A recent survey found the following plants from the list: Pepper saxifrage – frequent, Glaucous sedge - locally frequent, Agrimony - occasional, Cowslip - occasional, Oxeye daisy - occasional, Pignut - occasional, Northern marsh orchid – occasional, Meadowsweet – occasional, Water avens – occasional and Rough hawkbit – occasional. Boldon Lake was designated as a Site of Nature Conservation Importance in the Unitary Development Plan (1999). It is

Non-Statutory Designated Site	Distance & Direction from Site	Site Information
		proposed that an equivalent status is retained but that the name is changed to Local Wildlife Site, in keeping with Government guidance.
Calf Close Burn LWS	Located approximately 1.8km to the west.	Calf Close Burn is a linear site following the course of a small burn as it flows north across agricultural land towards the Fellgate Estate. The stream sides have abundant great hairy willowherb and there is a stand of common reed which extends into the channel of the burn. This is the largest long-standing reedbed in the borough. Other typical lowland fen plants present include meadowsweet, tufted hair-grass, bittersweet, branched bur-reed, water mint, brooklime, lesser pond sedge and hairy sedge. In places there are shrubby, carr type habitats with grey willow and osier, whilst there is also the occasional mature ash tree and hawthorn. Calf Close Burn qualifies as a Local Wildlife Site because it has more than 0.25 hectares of lowland fen habitats. These meet the definition in the Plan i.e. 'Wetlands overlying both peat and mineral soils and fed by groundwater as well as rainwater. Hydrology varies between and within fen types, from water table above ground for much or most of the year, to water table near the surface for only part of the year. Swamp, Phragmites australis Reedbed and Marsh are synonyms for certain types of fen community on particular substrates, with particular dominant species or with particular hydrology.' Calf Close Burn was designated as a Site of Nature Conservation Importance in the Unitary Development Plan (1999). It is proposed that an equivalent status is retained but that the name is changed to Local Wildlife Site, in keeping with Government guidance. The boundary has been redrawn with additions and deletions, to more accurately reflect the situation on the ground.
Downhill Old Quarry LWS	Located approximately 1km to the south of the site.	Downhill is a Magnesian limestone 'outlier' which forms a prominent domed hill overlooking the low lying, open land north of the Nissan car plant. Downhill Old Quarry is situated on the northwest edge of the hill. The quarry had already been worked by 1855, as shown on the OS 1st edition. There are three main elements to the site – the first being the former quarry base flanked by a cliff to the east, together with a small paddock by Downhill Farm. The second element is an area of woodland to the west, and the third a small area above the cliff edge. The former quarry base and paddock has a range of species-rich grassland types grading from Magnesian limestone grassland communities through to more neutral grasslands. Species present, in addition to those listed below, include musk thistle, glaucous sedge, black medick, yellow rattle and lesser knapweed. This is a rare habitat in north east England. The woodland has a canopy of ash and sycamore with an understorey of hawthorn, elder and bramble. To the south and east of the site the land was reclaimed in around 1990. A

Non-Statutory Designated Site	Distance & Direction from Site	Site Information
		small part of this area adjacent to the cliff edge has shallow soils and is developing a valuable Magnesian limestone community with plants such as autumn gentian, cowslip, centaury, yellow-wort, common spotted orchid, selfheal, hoary plantain, fairy flax and glaucous sedge. Birds using the site include Bullfinch and song thrush, whilst barn owl was regularly present until around 2003. Downhill Old Quarry qualifies because it has: a) More than 0.25 hectares of Magnesian limestone grassland as defined in the Plan. To meet the definition a minimum of two species must be recorded as frequent and a further three as occasional from a given list of indicator species. The most recent survey, of 1997, found the following from the list: Common rock-rose – frequent, Common spotted orchid – occasional, Rough hawkbit – occasional, Birds-foot trefoil – occasional, Hoary plantain – occasional, Cowslip – occasional, Salad burnet – occasional, Wild thyme – rare, Greater knapweed – rare, and Fairy flax – rare. Although only one species was recorded as frequent, the presence of a further nine species from the indicator list is more than sufficient to compensate. b) Broadleaf woodland. The definition of broadleaf woodland is 'all woodland which is not ancient (established since 1600) and which contains predominantly broadleaf species. This includes plantation as well as semi-natural or secondary woodland.' c) Scrub, as defined in the Durham Biodiversity Action Plan i.e. 'scattered or dense stands of naturally regenerating locally native tree and shrub species, generally under 5m tall'. The site was designated as a Site of Nature Conservation Importance in the Unitary Development Plan (1999). It is proposed that a small addition is made as described above (the area above the cliff edge) and that the equivalent status is retained but that the name is changed to Local Wildlife Site, in keeping with Government guidance.
Elliscope Farm East Hylton Bridge: LWS	Located approximately 1.75km to the south-west of	The site consists of two small woodlands and the linking section of the River Don, leading east from Hylton Bridge Farm. Elliscope Farm East is a linear, mature broadleaf plantation dominated by sycamore, with ash and elder. The understorey has bramble and species-poor neutral grassland. At the eastern end there is a small pond with reed canary-grass and branched bur-reed. Hylton Bridge is a small mature broadleaf plantation with a varied canopy of sycamore, ash, beech, horse chestnut, lime and crack willow. The understorey comprises hawthorn, hazel and rowan, with some woodland ground

Non-Statutory Designated Site	Distance & Direction from Site	Site Information
	the site.	flora such as wood false-brome, hairy brome, greater stitchwort and wood avens. The Don here has mostly unmodified riverbank, with features such as meanders, eroding earth cliffs, riffles and pools, and dead wood. Substrates vary from coarse silts to gravel, cobbles and the occasional boulder. The aquatic and marginal vegetation within the river channel typically includes branched bur-reed, reed canary-grass, fool's watercress and Himalayan balsam. Recent surveys have recorded occupied breeding habitat for water vole and use by otter. The riverside margins are mostly covered in dense scrub, but in parts there is coarse herbaceous vegetation such as false oatgrass, Yorkshire fog, creeping bent, hogweed, bramble, creeping thistle and great hairy willowherb. The adjacent fields are a mixture of arable and permanent pasture. Sites qualify as a Local Wildlife Site if they contain significant areas of one or more priority habitats as defined in the Durham Biodiversity Action Plan. At least one of the priority habitats must meet the relevant threshold values whilst smaller areas of other adjacent priority habitats, or those forming a mosaic, should be included in the designation. Elliscope Farm East/Hylton Bridge qualifies because it: a) Forms part of a section of the River Don which has particular habitat features (as described above) which are beneficial to wildlife. It also provides occupied breeding habitat for water vole and is used by otter. b) Contains approximately 1.5 hectares of scrub, as defined in the Durham Biodiversity Action Plan i.e. 'scattered or dense stands of naturally regenerating locally native tree and shrub species, generally under 5m tall'. c) Holds approximately 1.5 hectares of broadleaf woodland. The definition of broadleaf woodland is 'all woodland which is not ancient (established since 1600) and which contains predominantly broadleaf species. This includes plantation as well as semi-natural or secondary woodland.' Elliscope Farm East and Hylton Bridge were designated as separate Sites of Nature Conservation Importance in the Unitary Development Plan (1999). It is proposed that the boundary of Elliscope Farm East is to be amended to reflect the situation on the ground more accurately and that the two sites are to be combined, incorporating the linking stretch of the River Don. An equivalent status will be retained but the name changed to Local Wildlife Site, in keeping with Government guidance.

Non-Statutory Designated Site	Distance & Direction from Site	Site Information
Hedworth Dene LWS	Located approximately 1.8km to the north of the site.	The southern end of the site comprises a bowl-shaped area of land bounded by the A19 and railway line. On either side of the River Don there are semi-natural neutral grasslands ranging from species rich to species poor. Typical species of the former include meadow cranes-bill, great burnet, meadow vetchling, common knapweed, harebell and birds foot trefoil. There is also a heavily grazed, but species-rich horse pasture. On the south facing slopes there is an area of broadleaf woodland and scrub, with mature ash, hawthorn and sycamore, and dense brambles below in places. The River Don has mostly unmodified riverbank, except for a short stretch to the rear of Hawthorn Drive. It has features such as meanders, eroding earth cliffs, riffles and pools, and dead wood. Substrates vary from coarse silts to gravel, cobbles and the occasional boulder. The aquatic and marginal vegetation within the river channel typically includes branched bur-reed, reed canary-grass, fool's watercress and Himalayan balsam. Recent surveys have recorded suitable breeding habitat for water vole and an otter spaint (faeces left as a means of communicating with other otters) was recorded in 2003. To the north the riverside margins are mostly covered with a combination of scrub and coarse herbaceous vegetation such as false oat-grass, Yorkshire fog, creeping bent, hogweed, bramble, creeping thistle and great hairy willowherb. The fields to the east are permanent horse-grazed pasture. Hedworth Dene qualifies as a Local Wildlife Site because it: a) Forms part of a section of the River Don which has particular habitat features (as described above) which are beneficial to wildlife. It also provides suitable breeding habitat for water vole and is used by otter. b) Has more than 0.5 hectares of lowland meadow and pasture as defined in the Durham Biodiversity Action Plan. To meet the definition a minimum of two species must be recorded as frequent and a further two as occasional from a given list of indicator species. The most recent survey did not measure abundance but did record the following plants from the indicator list: Agrimony, Common knapweed, Birds foot trefoil, Meadow cranesbill, Meadow vetchling, Pepper saxifrage, Rough hawkbit, and Great burnet. c) Holds broadleaf woodland. The definition of broadleaf woodland is 'all woodland which is not ancient (established since 1600) and which contains predominantly broadleaf species. This includes plantation as well as semi-natural or secondary woodland. Hedworth Dene was designated as a Site of Nature Conservation Importance in the Unitary Development Plan (1999). It is proposed that the boundary of the site is to be extended to incorporate the River Don as far north as the northern end of

Non-Statutory Designated Site	Distance & Direction from Site	Site Information
		Hedworth Lane. An equivalent status will be retained but the name changed to Local Wildlife Site, in keeping with Government guidance.
Inverness Road Jarrow LWS	Located approximately 1.7km to the north of the site.	Inverness Road is a bowl-shaped section of the River Don Valley bounded by the A19, to the west, and the railway line to the south. Much of the site consists of grassland, dominated by tall plants such as false oat-grass, hogweed and creeping thistle. Locally, the grassland becomes much more species rich, with herbs such as meadow cranesbill and great burnet. In places it grades into marshy/flushed grassland, with species such as various sedges, wild angelica, and reed canarygrass. A short length of the River Don, with culverts at either end, has unmodified riverbank. It has features such as a meander, eroding earth cliffs, riffles and pools, and dead wood. Substrates vary from coarse silts to gravel, cobbles and the occasional boulder. The aquatic and marginal vegetation within the river channel includes branched bur-reed, reed canary-grass, fool's watercress and Himalayan balsam. In one section the river bank has been excavated (probably around 1990) to create a small, diversely stocked marsh with plants such as common reed, valerian and lesser pond sedge. Whilst the river itself provides suitable habitat for water vole, the presence of lengthy culverts at both ends may reduce its value for breeding populations. Otters have been recorded upstream and downstream of the site. Small broadleaf plantations have a variety of trees such as alder and rowan, whilst the embankments of the A19 and the railway have developed mature scrub, with hawthorn, ash and willows near the Don. Inverness Road qualifies because it: a) Has more than 0.5 hectares of lowland meadow and pasture as defined in the Durham Biodiversity Action Plan. To meet the definition a minimum of two species must be recorded as frequent and a further two as occasional from a given list of indicator species. The most recent survey did not measure abundance but did record the following plants from the indicator list: Agrimony, Betony, Common knapweed, Birds foot trefoil, Fen bedstraw, Glaucous sedge, Goatsbeard, Greater birds foot trefoil, Meadow cranesbill, Meadow vetchling, Meadowsweet, Oxeye daisy, Pepper saxifrage, Great burnet, Sneezewort, Tufted vetch, and Yellow rattle. b) Forms part of a section of the River Don, over 5km in length, which has particular habitat features (as described above) which are beneficial to wildlife. It also provides potential breeding habitat for water vole and may be used by passing otters.

Non-Statutory Designated Site	Distance & Direction from Site	Site Information
		c) Holds broadleaf woodland. The definition of broadleaf woodland is 'all woodland which is not ancient (established since 1600) and which contains predominantly broadleaf species. This includes plantation as well as semi-natural or secondary woodland.' d) Contains scrub, as defined in the Durham Biodiversity Action Plan i.e. 'scattered or dense stands of naturally regenerating locally native tree and shrub species, generally under 5m tall'. Inverness Road was designated as a Site of Nature Conservation Importance in the Unitary Development Plan (1999). It is proposed that the boundary of the site is to be extended to incorporate a section of grassland to the northeast, which has similar characteristics to the rest of the site. An equivalent status will be retained but the name changed to Local Wildlife Site, in keeping with Government guidance.
Make Me Rich Meadow LWS	Located approximately 1km to the south-west of the site.	The site is made up of an area of species-rich, damp, unimproved grassland, together with a section of the River Don between the A19 and the A184. The meadow was formerly grazed, but has not been intensively managed for some years. In the absence of grazing, large areas have become dominated by tall stands of meadowsweet, great willowherb and tufted hairgrass. However, much of the original herb-rich vegetation has persisted and there are large and flourishing colonies of pepper saxifrage and great burnet. Four species of sedge are present but these are now of rare occurrence in the meadow and have probably declined as more vigorous patch-forming species have become dominant. Other herbs characteristic of this type of meadow include valerian, square-stalked St John's wort, cuckoo flower and wild angelica. Drier parts support harebell, hairless ladies mantle, hawkweeds, crosswort, ox-eye daisy, birds foot trefoil, zigzag clover, hoary ragwort and selfheal. This is a rare habitat in northeast England and was identified by Clare and John O'Reilly in 2009 as being closely related to MG4 grassland. MG4 is one of only two types of mesotrophic (neutral) grassland in Britain listed as an Annex 1 habitat under the European Habitats Directive. Hawthorn scrub is well established around the fringes of the grassland, but is so far only of scattered occurrence within, probably due to the damp conditions. Bramble, however, is starting to spread into the grassland in the absence of grazing. The section of the River Don has mostly unmodified riverbank, with features such as meanders, eroding earth cliffs, riffles and pools, and dead wood. Substrates vary from coarse silts to gravel, cobbles and the occasional boulder. The aquatic and marginal vegetation within the river channel typically includes branched bur-reed, reed canary-grass, fool's watercress and Himalayan balsam. The riverside margins typically have coarse herbaceous vegetation such as false oatgrass, Yorkshire fog,

Non-Statutory Designated Site	Distance & Direction from Site	Site Information
		creeping bent, hogweed, bramble, creeping thistle and great hairy willowherb. There are also areas of scattered scrub. The adjacent fields are arable, with some permanent pasture. Recent surveys have recorded occupied breeding habitat for water vole and use by otter. Make Me Rich Meadow qualifies because it has: a) More than 0.5 hectares of lowland meadow and pasture as defined in the Durham Biodiversity Action Plan. To meet the definition a minimum of two species must be recorded as frequent and a further two as occasional from a given list of indicator species. A recent survey found the following plants from the list: • Meadowsweet locally dominant • Pepper saxifrage frequent • Common knapweed locally frequent • Great burnet locally frequent • Meadow vetchling occasional • Sneezewort occasional • Tufted vetch occasional. b) Part of a section of the River Don which has particular habitat features (as described above) which are beneficial to wildlife. It also provides occupied breeding habitat for water vole and is used by otter. c) Scrub, as defined in the Durham Biodiversity Action Plan i.e. 'scattered or dense stands of naturally regenerating locally native tree and shrub species, generally under 5m tall'. Make Me Rich Meadow was designated as a Site of Nature Conservation Importance in the Unitary Development Plan (1999). It is proposed that an equivalent status is retained but that the name is changed to Local Wildlife Site, in keeping with Government guidance. In addition the site is to be extended to take in a section of the River Don, to the north.
Mount Pleasant Marsh LWS	Located approximately within 0.75km to the south-west of the site.	The site is adjacent to the A19 and the busy 'Testos' roundabout. It is set in the grounds of a large electricity substation, but nevertheless holds a surprising variety of valuable habitats in a relatively small area. It is the setting for the West Boldon Environmental Education Centre, run by Groundwork South Tyneside and supported by National Grid. The Centre hosts large volumes of educational visits and training events. The main pond has a viewing/dipping platform and is fringed by extensive stands of reedmace that grade through fen habitats to a small but very species-rich, damp, ridge and furrow meadow with plants such as meadowsweet, marsh ragwort, tufted hair-grass, pepper saxifrage and rush species. This is a rare habitat in north east England. Two smaller ponds near the Centre are rich in pond life and are used for pond dipping. The site has a large population of breeding toads, frogs and smooth newts. Around the margins of the site there are well established mixed

Non-Statutory Designated Site	Distance & Direction from Site	Site Information
		broadleaf plantations and secondary woodland. The field layer has plants such as creeping soft grass, red campion, wavy hair-grass, wood avens and, of particular interest, adders tongue fern and broad leaved helleborine. The ponds play host to grey heron, kingfisher and breeding mallard, moorhen, coot and reed bunting. Elsewhere the site is used by a wide range of birds such as bullfinch, willow tit, great spotted woodpecker and a good density of commoner woodland species. At least six species of dragonfly/ damselfly have been recorded using the marsh in recent years. Mount Pleasant Marsh qualifies as a Local Wildlife Site because it has: a) A pond, as defined in the Durham Biodiversity Action Plan (see text box). In addition South Tyneside Council has adopted the definition for ponds of high value from DEFRA Higher Level Stewardship Farm Environment Plan, WO7, which requires that they should 'Contain at least 15 naturally occurring, floating, submerged, and/or marginal plants and/or support high value species of plant or animal.' Recent surveys of Mount Pleasant Marsh have revealed the presence of at least 18 species of such plants. b) Lowland fen habitats. These are defined in the Plan as 'Wetlands overlying both peat and mineral soils and fed by groundwater as well as rainwater…Hydrology varies between and within fen types, from water table above ground for much or most of the year, to water table near the surface for only part of the year. Swamp, Phragmites australis Reedbed and Marsh are synonyms for certain types of fen community on particular substrates, with particular dominant species or with particular hydrology.' c) More than 0.5 hectares of lowland meadow and pasture as defined in the Durham Biodiversity Action Plan. To meet the definition a minimum of two species must be recorded as frequent and a further two as occasional from a given list of indicator species. A recent survey found the following plants from the list: • Great burnet frequent • Meadow vetchling frequent • Pepper saxifrage frequent Glaucous sedge locally frequent • Eyebright locally frequent • Greater birds foot trefoil occasional • Marsh bedstraw occasional • Northern marsh orchid occasional • Oxeye daisy occasional • Pignut occasional • Meadowsweet occasional • Water avens occasional • Rough hawkbit occasional • Tufted vetch occasional d) Broadleaf plantation. The definition of broadleaf woodland is 'all woodland which is not ancient (established since 1600) and which contains predominantly broadleaf species. This includes plantation as well as semi-natural or

Non-Statutory Designated Site	Distance & Direction from Site	Site Information
		secondary woodland.' Mount Pleasant Marsh was designated as a Site of Nature Conservation Importance in the Unitary Development Plan (1999). It is proposed that an equivalent status is retained but that the name is changed to Local Wildlife Site, in keeping with Government guidance.
Newton Garths LWS	Located approximately 1.5km to the north of the site.	Newton Garths includes several fields heavily grazed by horses, comprising species-rich, neutral, ridge and furrow pasture sloping down to the River Don. This is a rare habitat in north east England. The eastern pasture is dominated by herbs such as plantains, creeping buttercup and yarrow, also common cat's-ear, birds foot trefoil and selfheal. The hollows have a wetland element with species such as glaucous sedge and marsh ragwort. The remaining fields to the west are more species-rich with common knapweed, great burnet, harebell, devil's bit scabious and tormentil. A scattering of mature shrubs, such as hawthorn and elder, are mainly associated with the field boundaries. Breeding farmland birds include yellowhammer and grey partridge. There is also a pond, created in around 1991, dominated by common red and reed sweet-grass. Other plants include duckweeds, purple loosestrife and broad-leaved pondweed. The River Don here has mostly unmodified riverbank with features such as meanders, eroding earth cliffs, riffles and pools, and dead wood. Substrates vary from coarse silts to gravel, cobbles and the occasional boulder. The aquatic and marginal vegetation within the river channel typically includes branched bur-reed, reed canary-grass, fool's watercress and Himalayan balsam. The riverside margins typically have coarse herbaceous vegetation such as false oat-grass, Yorkshire fog, creeping bent, hogweed, bramble, creeping thistle and great hairy willowherb. There are also areas of scattered scrub and trees. Recent surveys have recorded heavily occupied breeding habitat for water vole, probable use by otter and regular use by moorhen and kingfisher. The river also has a colony of the uncommon banded demoiselle damselfly. Newton Garths qualifies as a Local Wildlife Site because it has: a) More than 0.5 hectares of lowland meadow and pasture as defined in the Durham Biodiversity Action Plan. To meet the definition a minimum of two species must be recorded as frequent and a further two as occasional from a given list of indicator species. A recent survey did not assess abundance but did find the following plants from the list: Betony, Birds foot trefoil, Common knapweed, Devil's-bit scabious, Meadowsweet, Glaucous sedge, Great burnet, Tormentil, and Water mint.

Non-Statutory Designated Site	Distance & Direction from Site	Site Information
		b) Part of a section of the River Don which has particular habitat features (as described above) which are beneficial to wildlife. It provides occupied breeding habitat for water vole and is probably used by otter. c) A pond, as defined in the Durham Biodiversity Action Plan i.e. 'a temporary or permanent water body between 5 square metres and two hectares in surface area, which holds areas of open water at least part of the year. The definition excludes garden ponds.' In addition South Tyneside Council has adopted the definition for ponds of high value from DEFRA Higher Level Stewardship Farm Environment Plan, WO7, which requires that they should 'Contain at least 15 naturally occurring, floating, submerged, and/or marginal plants and/or support high value species of plant or animal.' Surveys of the pond at Newton Garths have revealed the presence of at least 18 species of such plants. d) Scrub, as defined in the Durham Biodiversity Action Plan i.e. 'scattered or dense stands of naturally regenerating locally native tree and shrub species, generally under 5m tall'. It is proposed that Newton Garths is designated as a Local Wildlife Site.
River Don New Road LWS	Located approximately 1.5km to the north-east of the site.	The site consists of a section of the River Don leading north from New Road. In this stretch the Don has mostly unmodified riverbank with features such as meanders, eroding earth cliffs, riffles and pools, and dead wood. Substrates vary from coarse silts to gravel, cobbles and the occasional boulder. The aquatic and marginal vegetation within the river channel typically includes branched bur-reed, reed canary-grass, fool's watercress and Himalayan balsam. The riverside margins typically have coarse herbaceous vegetation such as false oat-grass, Yorkshire fog, creeping bent, hogweed, bramble, creeping thistle and great hairy willowherb. There are also areas of scattered riverside scrub, which become more continuous towards the northern end of the site. The adjacent fields are both arable and permanent pasture, with the latter including West Farm Meadows Site of Special Scientific Interest. Recent surveys have recorded occupied breeding habitat for water vole and probable use by otter (i.e. recent records up and downstream). Sites qualify as a Local Wildlife Site if they contain significant areas of one or more priority habitats as defined in the Durham Biodiversity Action Plan. River Don, New Road qualifies because it: a) Forms part of a section of the River Don which has particular habitat features (as described above) which are beneficial to wildlife. It also provides occupied breeding habitat for water vole and is probably used by otter.

Non-Statutory Designated Site	Distance & Direction from Site	Site Information
		b) Contains scrub, as defined in the Durham Biodiversity Action Plan i.e. 'scattered or dense stands of naturally regenerating locally native tree and shrub species, generally under 5m tall.' It is proposed that River Don, New Road is designated as a Local Wildlife Site.
River Don North Road LWS	Located adjacent to site, immediately to the west.	The site consists of a section of the River Don between North Road and Newcastle Road. In this stretch the Don has mostly unmodified riverbank with features such as meanders, eroding earth cliffs, riffles and pools, and dead wood. Substrates vary from coarse silts to gravel, cobbles and the occasional boulder. The aquatic and marginal vegetation within the river channel typically includes branched bur-reed, reed canary-grass, fool's watercress and Himalayan balsam. The riverside margins are mostly well covered with tree/shrub species such as hawthorn, elder and willow species. Along both sides are heavily grazed horse pastures with damp species-rich neutral grassland, featuring plants such as creeping buttercup, lesser knapweed, birds-foot trefoil, oxeye daisy, selfheal and meadowsweet. Recent surveys have recorded occupied breeding habitat for water vole and use by otter. Sites qualify as a Local Wildlife Site if they contain significant areas of one or more priority habitats as defined in the Durham Biodiversity Action Plan. River Don, North Road qualifies because it: a) Forms part of a section of the River Don which has particular habitat features (as described above) which are beneficial to wildlife. It also provides occupied breeding habitat for water vole and is used by otter. b) Contains scrub, as defined in the Durham Biodiversity Action Plan i.e. 'scattered or dense stands of naturally regenerating locally native tree and shrub species, generally under 5m tall'. c) Contains areas of lowland meadow and pasture. It is proposed that River Don, North Road is designated as a Local Wildlife Site.
River Don West Boldon LWS	Located approximately 1km to the north-east of	This is a linear site and covers the banks of the River Don as it flows through West Boldon between North Road and New Road. The Don here has mostly unmodified riverbank with features such as meanders, eroding earth cliffs, riffles and pools, and dead wood. Substrates vary from coarse silts to gravel, cobbles and the occasional boulder. The aquatic and marginal vegetation within the river channel typically includes branched bur-reed, reed canary-grass, fool's watercress, hemlock

Non-Statutory Designated Site	Distance & Direction from Site	Site Information
	the site	water-dropwort and Himalayan balsam. The riverside margins are broad and have coarse herbaceous vegetation such as false oat-grass, Yorkshire fog, creeping bent, hogweed, bramble, creeping thistle and great hairy willowherb. Beyond this strip is amenity grassland and, in the north east of the site, raised flood protection banks. There are areas of scattered scrub alongside the river. Recent surveys have demonstrated that this is one of the best breeding sites for water vole in the region. There is likelihood that it is used by otter, demonstrated by the fact that otters have been recorded recently on the River Don to the north and south of this site. Banded demoiselle damselfly are also present. Sites qualify as a Local Wildlife Site if they contain significant areas of one or more priority habitats as defined in the Durham Biodiversity Action Plan. River Don, West Boldon qualifies because it: a) Forms part of a section of the River Don which has particular habitat features (as described above) which are beneficial to wildlife. It also provides occupied breeding habitat for water vole and is used by otter. b) Contains scrub, as defined in the Durham Biodiversity Action Plan i.e. 'scattered or dense stands of naturally regenerating locally native tree and shrub species, generally under 5m tall'. It is proposed that River Don, West Boldon is designated as a Local Wildlife Site.
Station Burn Boldon Colliery LWS	Located approximately 1.75km to the north of the site.	The site, which is also designated as a Local Nature Reserve, is a section of the River Don valley north of Boldon Colliery. Station Burn has an industrial history stretching back at least 500 years. Evidence includes the remains of a water mill and associated features, a former waggonway and earthworks relating to the former Boldon Colliery. The majority of the site comprises grassland, ranging from tall neutral grassland to finer more species-rich grassland with species such as yarrow, cat's ear, black medick, selfheal, pepper saxifrage and great burnet. This is a rare habitat in north east England. Marshy areas hold ragged robin and hemlock water dropwort. The River Don has mostly unmodified riverbank, with features such as meanders, eroding earth cliffs, riffles and pools, and dead wood. Substrates vary from coarse silts to gravel, cobbles and the occasional boulder. The aquatic and marginal vegetation within the river channel includes branched bur-reed, reed canary-grass, fool's watercress, great hairy willwherb, fennel pondweed and Himalayan balsam. Recent surveys have recorded occupied breeding habitat for water vole and otter have recently been recorded both up and downstream. Birds such as moorhen, mallard, grey wagtail and kingfisher

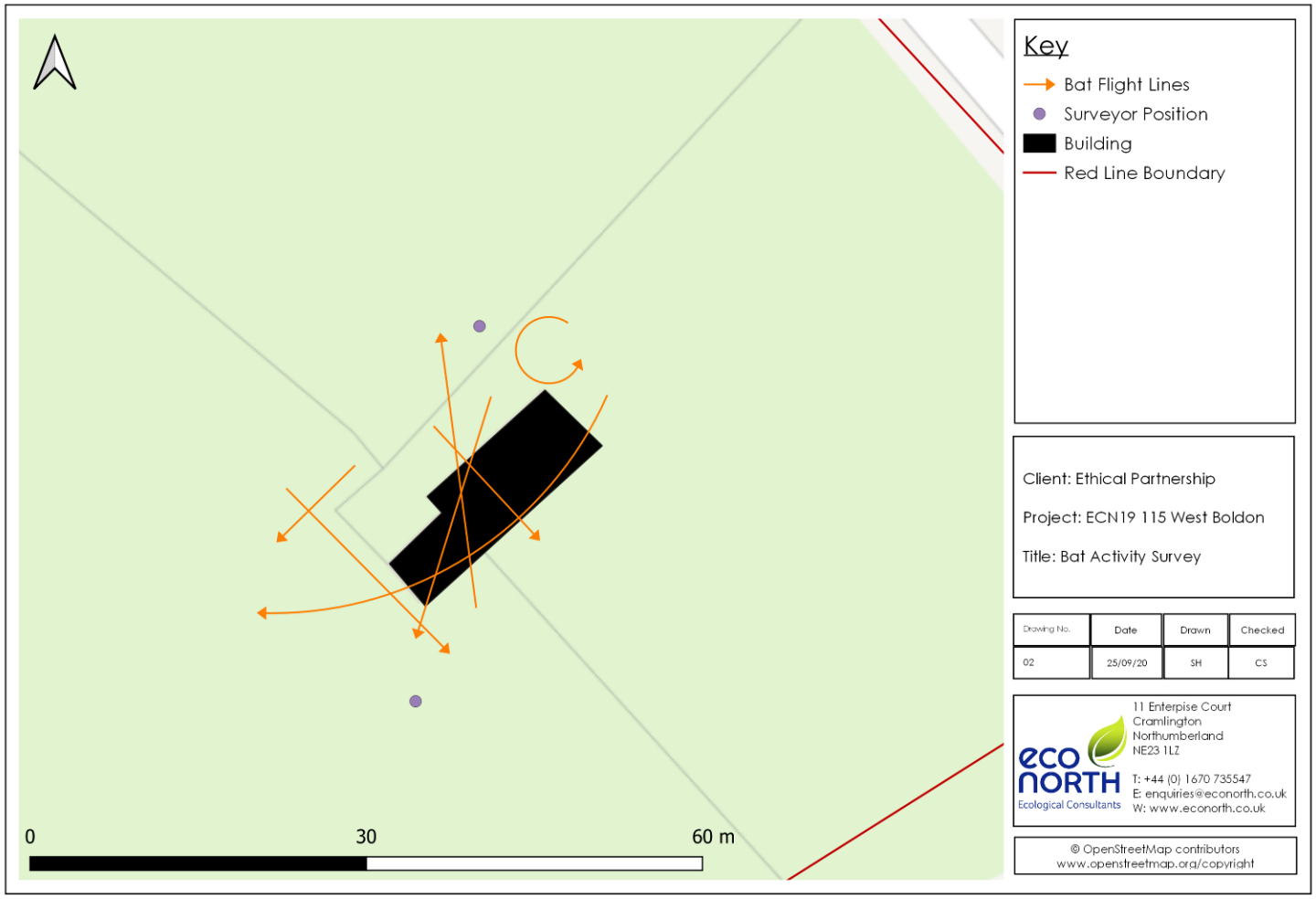
Non-Statutory Designated Site	Distance & Direction from Site	Site Information
		regularly use the river, whilst banded demoiselle damselfly are also present. There are four small ponds, all close to the river. These hold plants such as yellow iris, reed sweet-grass, water plantain, brooklime, spiked water-milfoil and celery-leaved crowfoot. There is also a good variety of animal life including pond snails and invertebrates such as great diving beetles and water boatmen. Tree cover comprises broadleaf woodland with a wide mix of species and scrub dominated by hawthorn and gorse, with bramble and dog rose below. The scrub is primarily on the south facing slopes and is favoured by breeding birds such as whitethroat and yellowhammer, whilst willow tit winter at the site. Station Burn qualifies as a Local Wildlife Site because it: a) Has more than 0.5 hectares of lowland meadow and pasture as defined in the Durham Biodiversity Action Plan. To meet the definition a minimum of two species must be recorded as frequent and a further two as occasional from a given list of indicator species. The most recent survey did not measure abundance but did record the following plants from the indicator list: • Common knapweed • Betony • Birds foot trefoil • Goatsbeard • Meadowsweet • Meadow cranesbill • Meadow vetchling Rough hawkbit • Ragged robin • Water mint • Great burnet • Pepper saxifrage b) Forms part of a section of the River Don which has particular habitat features (as described above) which are beneficial to wildlife. It also provides prime, occupied breeding habitat for water vole and is used by otters. c) Has ponds, as defined in the Durham Biodiversity Action Plan ie 'a temporary or permanent water body between 5 square metres and two hectares in surface area, which holds areas of open water at least part of the year. The definition excludes garden ponds.' In addition South Tyneside Council has adopted the definition for ponds of high value from DEFRA Higher Level Stewardship Farm Environment Plan, WO7, which requires that they should 'Contain at least 15 naturally occurring, floating, submerged, and/or marginal plants and/or support high value species of plant or animal.' Surveys of the ponds at Station Burn have revealed the presence of at least 16 species of such plants. d) Holds broadleaf woodland. The definition of broadleaf woodland is 'all woodland which is not ancient (established since 1600) and which contains predominantly broadleaf species. This includes plantation as well as semi-natural or

Non-Statutory Designated Site	Distance & Direction from Site	Site Information
		secondary woodland.' e) Contains scrub, as defined in the Durham Biodiversity Action Plan ie 'scattered or dense stands of naturally regenerating locally native tree and shrub species, generally under 5m tall' Station Burn was designated as a Site of Nature Conservation Importance in the Unitary Development Plan (1999). It is proposed that equivalent status will be retained but the name changed to Local Wildlife Site, in keeping with Government guidance.
Station Burn Boldon Colliery LWS	Located approximately 1.75km to the north of the site.	The site, which is also designated as a Local Nature Reserve, is a section of the River Don valley north of Boldon Colliery. Station Burn has an industrial history stretching back at least 500 years. Evidence includes the remains of a water mill and associated features, a former waggonway and earthworks relating to the former Boldon Colliery. The majority of the site comprises grassland, ranging from tall neutral grassland to finer more species-rich grassland with species such as yarrow, cat's ear, black medick, selfheal, pepper saxifrage and great burnet. This is a rare habitat in north east England. Marshy areas hold ragged robin and hemlock water dropwort. The River Don has mostly unmodified riverbank, with features such as meanders, eroding earth cliffs, riffles and pools, and dead wood. Substrates vary from coarse silts to gravel, cobbles and the occasional boulder. The aquatic and marginal vegetation within the river channel includes branched bur-reed, reed canary-grass, fool's watercress, great hairy willwherb, fennel pondweed and Himalayan balsam. Recent surveys have recorded occupied breeding habitat for water vole and otter have recently been recorded both up and downstream. Birds such as moorhen, mallard, grey wagtail and kingfisher regularly use the river, whilst banded demoiselle damselfly are also present. There are four small ponds, all close to the river. These hold plants such as yellow iris, reed sweet-grass, water plantain, brooklime, spiked water-milfoil and celery-leaved crowfoot. There is also a good variety of animal life including pond snails and invertebrates such as great diving beetles and water boatmen. Tree cover comprises broadleaf woodland with a wide mix of species and scrub dominated by hawthorn and gorse, with bramble and dog rose below. The scrub is primarily on the south facing slopes and is favoured by breeding birds such as whitethroat and yellowhammer, whilst willow tit winter at the site.

Non-Statutory Designated Site	Distance & Direction from Site	Site Information
		Station Burn qualifies as a Local Wildlife Site because it: a) Has more than 0.5 hectares of lowland meadow and pasture as defined in the Durham Biodiversity Action Plan. To meet the definition a minimum of two species must be recorded as frequent and a further two as occasional from a given list of indicator species. The most recent survey did not measure abundance but did record the following plants from the indicator list: • Common knapweed • Betony • Birds foot trefoil • Goatsbeard • Meadowsweet • Meadow cranesbill • Meadow vetchling Rough hawkbit • Ragged robin • Water mint • Great burnet • Pepper saxifrage b) Forms part of a section of the River Don which has particular habitat features (as described above) which are beneficial to wildlife. It also provides prime, occupied breeding habitat for water vole and is used by otters. c) Has ponds, as defined in the Durham Biodiversity Action Plan ie 'a temporary or permanent water body between 5 square metres and two hectares in surface area, which holds areas of open water at least part of the year. The definition excludes garden ponds.' In addition South Tyneside Council has adopted the definition for ponds of high value from DEFRA Higher Level Stewardship Farm Environment Plan, WO7, which requires that they should 'Contain at least 15 naturally occurring, floating, submerged, and/or marginal plants and/or support high value species of plant or animal.' Surveys of the ponds at Station Burn have revealed the presence of at least 16 species of such plants. d) Holds broadleaf woodland. The definition of broadleaf woodland is 'all woodland which is not ancient (established since 1600) and which contains predominantly broadleaf species. This includes plantation as well as semi-natural or secondary woodland.' e) Contains scrub, as defined in the Durham Biodiversity Action Plan ie 'scattered or dense stands of naturally regenerating locally native tree and shrub species, generally under 5m tall' Station Burn was designated as a Site of Nature Conservation Importance in the Unitary Development Plan (1999). It is proposed that equivalent status will be retained but the name changed to Local Wildlife Site, in keeping with Government guidance. Turners Hill: Located approximately 1km to the south-west of the site. Turner's Hill is an area of grassland on a small circular

Non-Statutory Designated Site	Distance & Direction from Site	Site Information
		hillock within Boldon Golf Course, south east of Boldon Cemetery. The site has an exceptionally rich and diverse flora, with wildflowers and grasses typical of Magnesian limestone grassland. This is a rare habitat in northeast England. Plants present include Autumn gentian, dyers green weed, twayblade, burnet saxifrage, crested hair-grass and glaucous sedge. Turner's Hill qualifies as a Local Wildlife Site because it has more than 0.25 hectares of Magnesian limestone grassland as defined in the Durham Biodiversity Action Plan. To meet the definition a minimum of two species must be recorded as frequent and a further three as occasional from a given list of indicator species. The survey of 2005 found the following: Greater knapweed - frequent, Ladies bedstraw – frequent, Fairy flax – frequent, Kidney vetch – occasional, Harebell – occasional, Orchid spp – occasional, Eyebright spp – occasional, Rough hawkbit – occasional, Birds-foot trefoil – occasional, Cowslip – occasional, Small scabious – occasional, Devils-bit scabious – occasional and Wild thyme – occasional. It is proposed that Turner's Hill is designated as a Local Wildlife Site.
Downhill Old Quarry Local Geodiversity Site	Located approximately 1km to the south of the site.	The site comprises a long-abandoned limestone quarry, including an adjoining well-preserved limekiln. The last date of working of the quarry is unknown, but since abandonment the floor of the workings, together with associated spoil heaps and talus slopes adjacent to the former working faces, have become covered by well-established grassland, with considerable shrub and small tree growth adjacent to the former working faces. Since abandonment, slight to moderate weathering has accentuated, and thus partially enhanced, some of the geological features present within these rocks. Downhill Old Quarry exposes limestones and dolomites of Permian age, long known collectively as the 'Magnesian Limestone'. The internationally recognised term 'Zechstein Group' has today supplanted the term 'Magnesian Limestone' as a collective name for these rocks and their equivalents across central and eastern Europe and Russia. The name 'Zechstein' is derived from the Zechstein sea, the name given by geologists to the sea in which these rocks were deposited. However, as the original term Magnesian Limestone is so deeply embedded in British geological literature, and in modern biodiversity studies, most notably with reference to the unique 'Magnesian Limestone grassland habitat, the term is still employed by many geologists and ecologists, and is employed in this site description and others in the equivalent rocks in South Tyneside.

Appendix J – Bat Activity Survey Results



Appendix K – Otter and Water Vole Survey Results

Figure K1: Otter and Water Cole Site Survey Results



Table K1: Species Evidence and Target Notes Relating to Figure K1 above

Number	Description
1	Four water vole burrows plus 5th burrow a short distance further along eastern bank. Two access/paths recorded. Water vole footprint recorded adjacent to the tree. Otter footprint also recorded. Trampled/partially grazed land along bank. An additional further two water vole burrows recorded further back from bank.
2	Fresh otter footprint along bank. Potential water vole footprint. Otter spraint recorded.
3	Fresh potential water vole footprints along bank.
4	Steep banks. Stones present within faster flowing section of the water course. Potential otter spraint recorded on a flat stone.
5	Potential water vole hole on western bank, however, could be used by rats. Sheer sides on both banks with overhanging vegetation.
6	Old otter footprints. Ledge on side would provide good thoroughfare for mammals. At present, many old footprints which are indistinguishable.
7	Water course depth increases to 0.5m and narrows slightly. Burrows present, however, species cannot be determined. Burrows large therefore water vole likely. Evidence of grazed grass.
8	Giant hogweed recorded
9	Potential badger sett recorded with one to two entrances. Vegetation coverage over entrances suggests not in current use.
10	Thick scrub and Himalayan balsam on eastern bank. Grazed on western bank.
11	Both banks steep. No grass vegetation, bare earth, common nettles and Himalayan balsam
12	Large area of Himalayan balsam

Figure K2: Otter and Water Vole North of Site Survey Results



Table K2: Species Evidence and Target Notes Relating to Figure K2 above

Number	Description
13	Culvert
14	Overhanging vegetation, tall grass either side. Water vole burrows recorded on Eastern bank.
15	Knawed grass on Western bank indicating water vole presence.
16	Deep hole in very steep bankside, three to six potential collapsed water vole burrows. Rest place and knawed grass, potential evidence of water vole.
17	Potential water vole burrow - four potential small water vole burrows within section of overhanging embankments
18	Potential run on western bank.
19	Water vole burrow with path, on corner. 1m depth. Two further water vole burrows further downstream. Evidence of grass cuttings and seeds present.
20	Potential water vole burrow. No conclusive evidence of water vole such as knawed vegetation present, therefore could be other species.
21	Wooden bridge

Figure K3: Otter and Water Vole South of Site Survey Results



Table K3: Species Evidence and Target Notes Relating to Figure K3 above

Number	Description
22	Otter footprints present on bank along underpass
23	Overgrown dense scrub (dominated by brambles and common nettle with pockets of grass) with scattered trees along steep bank. Reduces visibility and access therefore impacts ability to fully inspect water course.
24	Disused bridge. Slow moving water with overhanging vegetation of tall ruderal and scrub vegetation on the steep banks. River depth <0.5m.