

# Braxbess Storage BESS

Ecological Impact Assessment Interim Report



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#### **Issuing office**

4 Riverside Studios | Newcastle Business Park | Newcastle Upon Tyne | NE4 7YL T: 0191 303 8964 | W: www.bsg-ecology.com | E: info@bsg-ecology.com

Client	Braxbess Limited
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	Name	Position	Date	
Originated	Adam Murphy	Ecologist	27 November 2023	
Reviewed	Claire Dewson	Dewson Principal Ecologist 28 November 20		
Updated in response to client comments	Adam Murphy	Ecologist	18 January 2024	
Approved for issue to the client	Claire Dewson	Principal Ecologist	18 January 2024	
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### 1 Summary

- 1.1 This report is an interim ecological impact assessment (EcIA) for the proposed battery energy storage system (BESS) at land south of Barns Ness Terrace, Innerwick, East Lothian, Scotland (the Site). Non-breeding bird surveys are currently underway and will be incorporated into the report as an addendum once complete.
- 1.2 At the time of commission, the original red line boundary consisted of arable fields and poor semiimproved grassland with supporting hedgerows. The surrounding landscape is predominately arable in nature with steep valleys containing woodland and watercourses.
- 1.3 A design change in November 2023 resulted in a minor amendment to the red line boundary, with the Site extended to include small areas of additional land. The additional area has not been surveyed and at this time cannot be included in this assessment. However, from aerial imagery the additional area appears to be composed of an access track and hedgerows. The final drainage design is unconfirmed at this stage and depending on the outcome further survey of areas outside of the red line maybe required.
- 1.4 Further survey is required for the additional land, as is further survey for non-breeding birds, and for that reason this report is an interim report. An addendum will be issued to update this report in respect of the extra land and non-breeding birds.
- 1.5 No statutory or non-statutory designated sites fall within the Site boundary. The Site adjoins two locally designated sites, with four more within a 2 km search area. Due to the close proximity of two of the locally designated sites measures to avoid potential impacts are recommended.
- 1.6 There are 13 nationally and internationally designated sites within a 10 km search area. The proposed development may have an effect on some sites primarily associated with non breeding bird assemblages.

An extended Phase 1 habitat survey identified six protected species groups which could be present on Site and impacted by the proposed development:



- 1.8 Bats, foraging and commuting no potential roosting features were detected within the Site boundary; as such any impacts will only be of relevance to commuting and foraging bats. The habitats within the Site are of low suitability for foraging bats though may be used for commuting purposes. The development will likely improve the suitability of the Site for foraging and commuting bats with the only additional mitigation recommended being the use of a sensitive lighting programme.
- 1.9 Breeding birds the breeding bird assemblage was surveyed between March and June 2023 using best practice methodology. Mitigation for the loss of arable land used by breeding skylark includes the provision of skylark plots in adjacent land to offset loss of the ten recorded skylark territories within the Site.
- 1.10 Non-breeding birds surveys are scheduled to be undertaken over the winter period 23/24 which is outside of the purview of this report. An addendum report will be submitted in 2024 which will assess the value of the wintering bird population.
- 1.11 Great crested newt no ponds or water bodies are present within the Site boundary. A single pond was located 180 m south which returned a positive result and supports a medium population of newts. The Site itself does not offer suitable habitat for the species but the grasslands, scrub and woodland offer suitability.

1.12 Otter – no otter were recorded on Site. A check prior to work on Site will take place to confirm status of the species. If evidence is found then appropriate measures to safeguard the species will be put in place.

## 2 Introduction

#### Background to the commission

- 2.1 BSG Ecology was initially commissioned in February 2023 by Braxbess Limited (the client) to undertake a preliminary ecological appraisal (PEA), breeding and wintering bird surveys, great crested newt surveys and a Habitats Regulations Appraisal (HRA) of farmland at land south of Barns Ness Terrace, Innerwick, East Lothian, Scotland (the Site). Following the completion of the PEA, BSG was commissioned to undertake an ecological impact assessment (EcIA) and report in April 2023. A red line boundary change was made in November 2023 to address access on Site and non breeding bird surveys are currently underway but are incomplete. The specifics of drainage are not currently understood and may warrant further survey work if it impacts ecologically sensitive habitats and/or species outside of the boundary.
- 2.2 This report sets out the methods and results of this ecological assessment, assesses the likely ecological impacts of the proposed works, and describes the measures for impact avoidance, mitigation, compensation and enhancement where appropriate.
- 2.3 This EcIA report contains five Figures:
  - Figure 1: Phase 1 Habitat Map
  - Figure 2: Statutory designated sites
  - Figure 3: Non statutory designated sites
  - Figure 4: Ponds within 500m of the Site
  - Figure 5: Breeding Bird Territory Map
- 2.4 It is supported by Appendices (1-7):
  - Appendix 1: Figures
  - Appendix 2: Site Photographic Sheet
  - Appendix 3: Target Notes
  - Appendix 4: Summary of relevant legislation
  - Appendix 5: Desk study results for birds that are qualifying features for statutory designated sites
  - Appendix 6: Great crested newt survey details
  - Appendix 7: Landscape Master Plan

#### Site Description

- 2.5 The Site is located on Land South of Barns Ness Terrace, Innerwick, East Lothian, EH42 1SE Barns and consists of agricultural land, dominated by arable, separated by variable field margins and a mix of drystone walls and hedgerows. It is approximately 5.75 km south east of Dunbar and 1.5 km west of Torness Power Station and the North Sea coastline.
- 2.6 The Site is on a hill, which slopes gently to the north and the south from the centre of the Site. From the southern Site boundary, the slope steepens into a valley which contains a watercourse and dense scrub. The watercourse flows to the east. The Site is approximately 20.6 hectares (ha) in size and is centred on Ordnance Survey National Grid reference NT 72149 73416. The location of the Site is shown on Figure 1, Appendix 1.
- 2.7 The location of the Site within the wider landscape and planning application boundary can be seen in Figure 2.

- 2.8 Habitats within and adjacent to the surveyed area comprise arable land, improved grassland, semiimproved grassland and hedgerows.
- 2.9 The Site is not subject to any nature conservation designations, the Impact Risk Zones for Scotland are not currently presented in Defra's interactive map (https://magic.defra.gov.uk/MagicMap.aspx).

#### Proposed Development

- 2.10 The client proposes to develop the Site into a battery energy storage system (BESS) facility up to 650MW with, transformers, substation and associated Infrastructure including access roads within and to the east of the Site. (see Appendix 7)
- 2.11 The proposed landscaping plans include woodland, scrub and hedgerow as well as species rich and tussocky grassland creation. For further information see landscape plan Appendix 7.

#### Planning policy and legislation

- 2.12 Summaries of the National Planning Policy Framework (NPPF) and Scottish Planning policy along with other relevant legislation can be found in Appendix 4.
- 2.13 Policies NH1 NH4 within East Lothian Council Local Development Plan 2018 state that developments must clearly demonstrate that there will not be adverse impacts upon protected species or international, national and local designations. Where this is not possible, appropriate mitigation measures are to be taken. Further detail can be found in Appendix 4.

#### Purpose of the report

2.14 This report provides an incomplete assessment of the likely ecological effects of the proposed development but where possible it sets out measures to mitigate and / or offset and, where necessary, to compensate those effects that could be identified; and describes ecological enhancement measures where appropriate.

#### Personnel

- 2.15 The following personnel have been involved in this project.
- 2.16 The extended Phase 1 Habitat survey was completed by Senior Ecologist Josh Havlin of BSG Ecology. Josh has six years of experience working as a professional ecological consultant. In that time, he has completed numerous ecological appraisals and assessments across Scotland and the north east of England.
- 2.17 The breeding bird surveys were completed by Senior Ecologist Josh Havlin of BSG Ecology. The survey effort was supported by Ian Forsyth, an ornithological subcontractor for BSG. Ian has led and participated in a range of bird surveys over a 30 year period employing a range of recognised survey methodologies.
- 2.18 The analysis of the results of the bird survey was completed by Principal Ecologist/Ornithologist Ian Heard at BSG Ecology. Ian has more than 12 years of experience as a professional ecological consultant and has completed a range of habitat and species surveys across England and Scotland.
- 2.19 The great crested newt survey was completed by Principal Ecologist Ian Heard at BSG Ecology, Ian has more than ten years working in ecology and holds a licence for surveying great crested newt in Scotland (NatureScot Licence number 235137). Ian was supported by Jacquelyn Grissom, Ecologist at BSG Ecology with experience of multiple newt surveys in England and Scotland. Great crested newt surveys were supported by Elizabeth Walker of Cheviot Ecology Ltd. (NatureScot Licence number 244171).
- 2.20 The report was prepared by Adam Murphy, Ecologist at BSG Ecology. Adam has worked in the ecological sector for more than four years and has contributed to multiple ecological assessments.

2.21 The final report has been technically reviewed by Claire Dewson, Principal Ecologist for BSG Ecology. Claire has worked in the ecological sector for more than 20 years and has contributed to many ecological assessments as author and/or reviewer.

### 3 Methods

#### Desk study

- 3.1 A desk study was undertaken to identify sites designated for nature conservation, protected and notable habitats and species, and invasive non-native species relevant to the Site and the proposed development. A stratified approach was taken when defining the desk study area based on the likely zone of influence of the proposed scheme on different ecological receptors and an understanding of the maximum distances typically considered by statutory consultees.
- 3.2 The desk study identified internationally important wildlife sites<sup>1</sup> and nationally important statutory designated sites<sup>2</sup> within 10 km, non-statutory designated sites<sup>3</sup>, and protected and notable species and habitats within 2 km of the Site. The location of internationally, nationally and locally important sites are presented in Figures 2 and 3.
- 3.3 A buffer of 10 km was considered suitable for statutory designated sites as, although the development has a small footprint, many of these sites contain highly mobile species such as wintering birds, which may use supporting habitat a considerable distance from these core areas.
- 3.4 A buffer of 2 km was considered suitable for protected and notable species records as this would inform how local habitats are being used by species of note and help to inform survey effort.
- 3.5 A buffer of 2 km was considered suitable for non-statutory designated sites. These sites are designated for their habitats, which considering the small footprint of the development, are only likely to be impacted a short distance from the development boundary.
- 3.6 Records of protected, notable, local sites and invasive species were requested within a 2 km buffer around the Site from The Wildlife Information Centre (TWIC).
- 3.7 Information publicly available on MAGIC Map was also consulted (accessed in April 2023 <u>https://magic.defra.gov.uk/MagicMap.aspx</u>) to search for statutory designated sites (within 10 km), certain non-statutory designated sites (within 2 km).
- 3.8 Records were viewed critically alongside field survey results to assist with the evaluation as opposed to relying on them as the sole basis for the evaluation.
- 3.9 Ordnance Survey mapping and publicly available aerial photography were also used to assess habitats and check for any features of potential interest.
- 3.10 Resources used to complete the desk study are summarised below in Table 1.

Data Source	Date Accessed / Received	Notes
MAGIC <sup>4</sup> (www. magic.defra.gov.uk)	Most recently accessed April 2023	A 2 km search area was adopted for statutory designated sites (this was extended to 10 km for international sites), Impact Risk Zones, and protected species licences. A check for mapped potential priority habitats on Magic was undertaken for a 250 m radius from the Site.

Table 1: Data sources referenced in the assessment

<sup>&</sup>lt;sup>1</sup> International Statutory designations include Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites.

National Statutory designations include National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI) and Local Nature Reserves (LNR).

<sup>&</sup>lt;sup>3</sup> Non-statutory sites are designated by local authorities (e.g. Sites of Importance for Nature Conservation or/and Local Wildlife Sites).

<sup>&</sup>lt;sup>4</sup> Multi Agency Geographic Information for the Countryside (MAGIC).

The Wildlife Information Centre (TWIC)	Received March 2023	A 2 km search area was adopted, and data were requested on protected species and notable species, priority habitats <sup>5</sup> and non-statutory designated wildlife sites.
Bing Maps (www. Bing.com/maps/) Google Earth Pro	Most recently accessed April 2023	A search was made for ponds within 500 m of the Site (https://www.gov.uk/guidance/great- crested-newts-surveys-and-mitigation- for-development-projects). Habitats were assessed using aerial imagery.

Consideration of potential limitations: desk study

3.11 No significant limitations have been identified.

#### Habitats

- 3.12 During November 2023 a design change was made to the red line boundary. The change includes the widening of an existing access track which now extends slightly into adjoining fields which have hedgerows and trees. This area has not been subject to an extended Phase 1 habitat survey or any other type of ground truthing survey. As such these areas have not been included within this assessment. It is proposed that a hedgerow survey and use of satellite data of the additional area be undertaken in 2024 to establish a robust baseline and to determine if further habitat or protected species surveys are required to inform an addendum to this report.
- 3.13 The habitats that were surveyed are thus described as the 'Survey Area' within this report, this area can be seen in Figure 1.

#### Phase 1 habitat survey

- 3.14 Habitats within the Survey Area are mapped in accordance with the Phase 1 habitat survey methodology (JNCC 2011). Botanical species lists for key habitats were recorded and is summarised in the results section of this report. The survey was "extended" to include an appraisal of the habitats' suitability for protected species. This included a search for signs of protected species or the species themselves. Such signs, and habitat features suitable for protected species were target noted.
- 3.15 Figure 1 presents the results of the extended Phase 1 habitat survey and the location of any target notes that were recorded.
- 3.16 Records for dominant and notable plants are recorded within the supporting PEA (BSG Ecology 2023b), as are incidental records of birds and other fauna noted during the course of the habitat survey. The latter have been used to justify the potential presence of important ecological features where applicable.
- 3.17 The Survey Area was also surveyed for the presence of invasive plant species as defined by the Wildlife and Countryside Act 1981 (as amended by the Wildlife and Natural Environment (Scotland) Act 2012); however, detailed mapping of such species is beyond the scope of this commission and locations on the habitat plan are indicative only.
- 3.18 The survey was completed by Josh Havlin in suitable weather conditions on two occasions due to a red line change. Table 2 below presents the details of the surveys.

<sup>&</sup>lt;sup>5</sup> Species and habitats listed in response to the provisions of Sections 40 and 41 of the Natural Environment and Rural Communities (NERC) Act 2006, which identifies species and habitats of principal importance for the purpose of conserving biodiversity ("S.41 species" and "S.41 habitats" respectively).

Table 2: Phase 1 habitat survey details

Survey	Date	Cloud cover (oktas)	Temperature in degree Celsius	Wind speed (Beaufort scale)	Precipitation
Extended Phase 1 habitat survey	20/02/2023	8	9	5	None
Extended Phase 1 habitat survey	21/03/2023	8	10	7	None

Consideration of potential limitations: Phase 1 habitat survey

3.19 The extended Phase 1 habitat survey was undertaken in February and March 2023. Whilst extended Phase 1 habitat surveys can be undertaken at any time of year, the optimal survey period is typically between April and July when most plant species are in flower and can be readily identified. Though the survey was undertaken outside this period, the weather conditions on Site were suitable for survey (for instance, no snow or heavy frost was on the ground to obscure the plant species present). Given the purpose of the report, including identification of habitat types, rather than the generation of comprehensive species lists; and given the nature of the habitats of the Site (agriculturally improved land) and the surrounding area, it is considered that sufficient botanical information was collected to accurately identify the habitats present.

#### Field studies: species / species groups



#### Breeding birds

3.22 Breeding bird surveys were completed on four occasions between March and June 2023, see Table 3 for details.

Date	Surveyor	Start time	Finish time	Duration	Weather
21/03/2023	Josh Havlin	06:15	09:00	2 hr 45 min	Temp 10 <sup>0</sup> C, Wind Beaufort 3, Cloud 7/8, precipitation 0
06/04/2023	Josh Havlin	06:20	08:30	2 hr 10 min	Temp 5 <sup>0</sup> C, Wind Beaufort 3, Cloud 6/8, precipitation 0
16/05/2023	lan Forsyth	06:10	09:10	3 hr	Temp 8ºC, Wind Beaufort 3, Cloud 0/8, precipitation 0

 Table 3: Breeding bird survey timings and weather conditions

09/06/2023	Josh Havlin	05:15	06:45	1 hr 30 min	Temp 10°C, Wind Beaufort 2, Cloud 8/8, precipitation 0
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- 3.23 Each survey was completed in line with the current best practice industry guidance (Bird Survey and Assessment Group, 2023). A constant search effort was employed, with the same survey transect being walked on all occasions. All surveys were carried out by suitably experienced ornithological surveyors.
- 3.24 Four surveys were completed during the morning around dawn, which is the period when breeding birds are most vocal. Based on the habitats present a crepuscular survey was not completed.
- 3.25 All birds were recorded using standard British Trust for Ornithology species and behaviour codes (Gilbert *et. al.*, 1998). The resultant data were subsequently analysed to create maps of breeding bird activity and to estimate the numbers of breeding pairs within the Site. The following approach was used to characterise breeding bird activity:
  - If nests or young, or evidence thereof, such as egg shells, recently vacated nests, adults carrying food or faecal sacks, were found the species was confirmed as breeding.
  - Birds were considered to be probably breeding if singing or displaying in the same area on multiple occasions; carrying nest material; if adults repeatedly alarmed; if there was disturbance display; if adults were seen carrying food; or if there were territorial disputes.
  - If birds were present within the Original red line boundary amongst suitable nesting habitat or recorded carrying out territorial behaviour such as singing only once in a locality, the birds were considered to be possibly breeding.
  - Species that were present but where no suitable nesting habitat was present, were flying over, Summering or likely to be still on migration, were considered not to be breeding.
- 3.26 Estimates of territory numbers have been assigned to each breeding species recorded within the survey area and a 50 m buffer, using the territory analysis approach described by Bibby *et al.*, (2000). Notable species, in terms of their rarity or abundance, are then considered further. Territories for those species confirmed or considered likely to be breeding within the survey area are shown on Figure 5.
- 3.27 Variation in the duration in survey visits can be accounted for by the varying degree of activity encountered during each survey visit. As the breeding season progressed more birds fledged and therefore the time taken during survey to record them increased.

Consideration of potential limitations: breeding birds

- 3.28 Four breeding bird surveys were completed in 2023. Recent industry guidance (Bird Survey Guidance, 2023), states that six visits is sufficiently robust to survey birds in lowland deciduous forest. Lowland forest hosts a wide range of bird species and is significantly more complex than most other habitat types. Due to the character of the Site, its size and the habitats present it was assessed as being considerably less complex than lowland forest. Therefore, four surveys were considered sufficient to provide a robust baseline to assess the breeding bird assemblage of the Survey Area. If initial survey findings had shown the survey area to host a wider and more significant breeding bird population additional surveys would have been undertaken. The reduced number of surveys is not considered to be a limitation.
- 3.29 No crepuscular surveys were undertaken, meaning that crepuscular species such as barn owl *Tyto alba* or snipe *Gallinago gallinago* may have been under-recorded. However, the habitats on Site were not considered likely to support these species and few records of crepuscular species of note were returned by desk study. For these reasons the lack of a crepuscular survey is not considered to be a limitation.

#### Great crested newt

- 3.30 The location of the survey area boundary and a buffer extending 500 m around it was initially assessed using aerial photographs and OS maps for the presence of ponds and other still water bodies such as non-flowing or slow flowing ditches.
- 3.31 There is a single pond within the buffer, located 180 m to the south of the survey area. The pond is on the opposite side of the steep sided valley, amongst an area of semi-improved grassland.
- 3.32 This was followed by a field survey of the pond to assess its suitability to support breeding great crested newt *Triturus cristatus*. The survey was carried out on 20 February 2023 as part of the extended Phase 1 survey and followed the prescribed Habitat Suitability Index (HSI) for great crested newt (Oldham et al., 2000).
- 3.33 The pond was identified as having 'Average' suitability to support breeding great crested newt (0.62 HIS score) to support breeding great crested newt and was then surveyed for their presence / absence.
- 3.34 A great crested newt eDNA survey was undertaken and samples were taken from the pond in reference to published methodology and guidance (Biggs et al., 2014) and samples were sent to a scientific lab (SureScreen Scientifics Ltd) for analysis and indication of great crested newt DNA. Ian Heard carried out the sampling in April 2023 and holds a NatureScot licence for the species.
- 3.35 The pond tested positive for great crested newt and a population size class assessment was completed using torching and bottle trapping over six visits in suitable weather conditions. Full details of these surveys can be found in Appendix 6.
- 3.36 . The following survey methods were implemented at the pond:
  - Torching (using a one million candle-power Clulite torch to look for newts within the water-body after dark). The effectiveness of torching is influenced by vegetation cover and turbidity therefore these factors were estimated during each survey.
  - Bottle trapping followed best practice guidance as set out by NatureScot 2018.
- 3.37 Surveyors recorded the number of newts discovered, as well as species, sex and life stage as well as any other species of note.

Consideration of potential limitations: great crested newts

3.38 NatureScot advise that potential breeding ponds for great crested newt should be surveyed between March and June with torch surveys between mid-March and mid-June and bottle trapping March to May. However, reference is made to <u>Great Crested Newt Mitigation Guidelines</u> (English Nature m2001) which states that torching should ideally be undertaken between March and May. The last torching survey was carried out on 08 June 2023 in suitable weather conditions; despite the survey being in early June it is felt that owing to the northerly location of the Site this is not a major constraint. The core survey effort also included at least 3 visits during mid-April and mid-May as required by the guidelines above.

#### Otter

3.39 During the 'extended' Phase 1 habitat survey, the habitats present within the survey area were assessed to determine their suitability to support commuting otter *Lutra lutra*. Any incidental signs of otter presence that were observed during the survey were recorded, such as holts, spraints, couches, tracks and other signs (Chanin 2003).

Consideration of potential limitations: otter

3.40 There is no watercourse running through the Survey Area, and should otters be present on nearby watercourses it is unlikely that they would commute through the Survey Area as it is very open and non-riverine in nature.

#### Reptiles

3.41 During the extended Phase 1 habitat survey an assessment was made of the Survey Area's suitability to support reptiles. The area is made up predominantly of agriculture fields and there are very few natural refugia, foraging or basking areas on Site.

Consideration of potential limitations: reptiles

3.42 Surveys were conducted during March, a time of year of low activity for reptiles. However, the survey was searching for features which may support reptiles such as brash piles or rocky areas and as such this is not considered a significant limitation.

#### Non breeding birds

- 3.43 These surveys are currently underway on Site with two surveys completed at the time of writing this report. A full analysis of the wintering bird interest will be carried on completion of the sixth survey which will be in March 2024.
- 3.44 The surveys will take place in the winter of 2023/24. The survey methodology has been adapted, combining the 'Common Bird Census' (CBC) and 'Winter Farmland Bird Survey' as devised by the British trust for Ornithology (BTO) in reference to (Bibby, et.al., 2000). During the six survey visits, the 'look-see' methodology (Gilbert, et.al., 1998) will be undertaken, observing habitats along a predetermined survey transect route and stopping at intervals, scanning the survey area for birds using close-focusing binoculars. All species heard and or seen will be recorded onto base maps using standard British Trust for Ornithology (BTO) Species Codes, with other notes (for instance, of juvenile birds) made in accordance with standard practice (Bibby, et.al., 2000).
- 3.45 One survey will be undertaken per month (October 2023 to March 2024) to ensure that resident and migratory bird species are covered. Surveys will be generally conducted during the diurnal period and between the timings of 07:30 and 18:30 (adjusted accordingly for daylight changes). All surveys are to be undertaken during suitable weather conditions.

#### Methods of Evaluation and Impact Assessment

- 3.46 The evaluation and assessment have been undertaken with reference to the current Guidelines for Ecological Impact Assessment (EcIA) in the United Kingdom developed by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2019). Although this is recognised as the industry standard for ecological assessment, the guidance is not prescriptive; rather, it aims to "provide guidance to practitioners for refining their own methodologies".
- 3.47 Ecological receptors of negligible or site level importance only are unlikely to trigger a biodiversity policy response and will be scoped out. If a receptor of site level importance is potentially capable of triggering a policy response and is likely to be affected, such as a habitats and species on the Scottish Biodiversity List, then it will not be scoped out.

#### Important Ecological Features

3.48 A first step in EcIA is determination of which ecological features (habitats, species, ecosystems and their functions/processes) are important. Important features should then be subject to detailed assessment if they are likely to be affected by a Development. It is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to effects of the Development, such that there is no risk to their viability.

3.49 Ecological features can be important for a variety of reasons. Importance may relate, for example, to the quality or extent of designated sites or habitats, to habitat/species rarity, to the extent to which they are threatened throughout their range, or to their rate of decline.

#### Evaluation: Determining Importance

- 3.50 The importance of an ecological feature is considered within a defined geographical context. The following frame of reference has been used in this case:
  - International / European
  - National (UK)
  - Regional: Lothian
  - County: East Lothian
  - Vice-county VC 82 (Branxton). This is a proxy for "district" level evaluation, a level between County and Local levels
  - Local (intermediate between VC 82 and the Site)
  - the Site (application boundary and immediate surrounds)
  - Below Site level: negligible importance.

#### Characterising and Quantifying Effects and Assessing their Significance

- 3.51 The CIEEM (2019) guidelines suggest that ecological effects or impacts should be characterised in terms of ecosystem structure and function and reference should be made <u>where relevant</u> [author's emphasis] to: beneficial, adverse or "no significant" (or "no") effects; extent; magnitude; duration; reversibility; timing and frequency; and cumulative effects. The guidelines provide a list of "*aspects of ecological structure and function to consider when predicting impacts and effects*". The terms impact and effect are used within this EcIA in accordance with the following definitions (as provided by the guidelines):
  - Impact: "Actions resulting in changes to an ecological feature. For example, the construction activities of a development removing a hedgerow".
  - Effect: "Outcome to an ecological feature from an impact. For example, the effects on a dormouse population from loss of a hedgerow".
- 3.52 Following the characterisation of effects, an assessment of the ecological significance of those effects is made. The guidelines promote a transparent approach in which a beneficial or adverse effect is determined to be significant or not, in ecological terms, in relation to the integrity of the defined site or ecosystem(s) and/or the conservation status of habitats or species within a given geographical area, which relates to the level at which it has been valued. The decision about whether an effect is significant or not, is independent of the value of the ecological feature; the value of any feature that will be significantly affected is then used to determine the implications, in terms of legislation and / or policy.
- 3.53 Significance is a concept related to the weight that should be attached to effects when decisions are made. For this assessment, 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features'. A significant effect is simply an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project. The EcIA guidelines state:

"A significant effect does not necessarily equate to an effect so severe that consent for the project should be refused planning permission. For example, many projects with significant adverse ecological effects can be lawfully permitted following EIA procedures".

3.54 As part of the impact assessment in this case, the "do nothing" scenario (the outcome of not developing the Site and allowing it to remain in current management) is also considered.

## 4 Ecological Baseline and Evaluation

- 4.1 This section sets out the findings of the baseline ecological survey work and desk study. It then goes on to assess the interest of the identified ecological resources. Ecological receptors and are considered in the following order:
  - Protected sites both statutory (e.g. SSSI) and non-statutory (e.g. LWS);
  - Habitats; and
  - Species.

#### Future Baseline

- 4.2 In the absence of the proposed development, it is likely that the main Site would remain in crop production, managed in a similar way as they are currently.
- 4.3 In the absence of the proposed development, the biodiversity interest of the Site is likely to remain the same as it is currently.

#### **Statutory and Non-Statutory Protected Sites**

- 4.4 There are thirteen nationally and internationally designated sites within the 10 km search area. These are shown in Table 4.
- 4.5 There are no nationally or internationally designated sites within 2 km of the Site.

#### Table 4: Statutory sites within 10km of the Site

Site name	Reason for designation	Distance and direction from Site
Barns Ness Coast SSSI	Designated for geological reasons and for supporting rare coastal habitats, including: saltmarsh, sand dune, and shingle. The dunes and shingle are nutrient-rich and support plants that are uncommon in the local area.	2,175 m north
Outer Firth of Forth and St Andrews Bay Complex SPA	Qualifying features under Article 4.1 of (2009/147/EC)         Overwinter, supports: red-throated diver Gavia stellata (5%), Slavonian grebe Podiceps auritus (2.7%), little gull Larus minutus (> 50 individuals). In the breeding season, supports feeding arctic tern Sterna paradisea (1.2%), common tern Sterna hirundo (8.8%).         Qualifying features under Article 4.2 of (2009/147/EC)         Overwinter: eider Somateria mollissima (2.1%); in the breeding season: foraging shag Phalacrocorax aristotelis (1.7%), foraging gannet Morus bassanus.         In the non-breeding season, area supports an assemblage in excess of 30,500 individuals including: long-tailed duck Clangula hyemalis, common scoter Melanitta nigra, red-throated diver Gavia stellata, eider Somateria mollissima, surf scoter Melanitta fusca, goldeneye Bucephala clangula, red-breasted merganser Mergus serrator, and Slavonian grebe Podiceps auritus.         In the breeding season, supports 122,245 seabirds, including: Atlantic puffin Fratercula arctica, kittiwake Rissa trydacty/a, manx shearwater Puffinus puffinus, guillemot Uria aalge, herring gull Larus argentatus, arctic tern Sterna paradisea, common tern Sterna hirundo, shag Phalacrocorax aristotelis, gannet Morus bassanus, razorbill Alca torda, black-headed gull Chroicocenhalus ridibundus common guil Larus arguna and titte guil Larus minutus	2,600 m north east
Lammermuir Deans SSSI	Designated for fluvial geomorphology and presence of three habitats that are rare in the area: upland mixed ash woodland (in the context of the wider area), subalpine calcareous grassland, and valley fen.	2,670 m south west
Woodhall Dean SSSI	Designated for presence of upland oak woodland, featuring sessile oak <i>Quercus petraea</i> specimens that do not show much evidence of hybridisation.	3,060 m west

Site name	Reason for designation	Distance and direction from Site
Pease Bay Coast SSSI	Designated for geological reasons and for the presence of maritime cliff habitats that feature para-maritime cliff-slope communities that display both calcareous and neutral indicator species.	4,570 m south east
Rammer Cleugh SSSI	Designated for geological reasons and presence of upland oak woodland which is scarce in East Lothian.	5,950 m west
Firth of Forth SPA	Qualifving features under Article 4.1 of (2009/147/EC)         Overwinter, regularly supports (as percentage of GB population): Gavia stellata (2%), Podiceps auritus (21%), Pluvialis apricaria (1%), Limosa lapponica (4%). On passage: Sterna sandvicensis (6%).         Qualifving features under Article 4.2 of (2009/147/EC)         Overwinter, regularly supports: Anser brachyrhynchus (6% of eastern Greenland/Iceland/UK biogeographic population), Tadorna tadorna (2% of the northwestern Europe biogeographic population), Tadorna tadorna (2% of the northwestern Europe biogeographic population), Tringa totanus (3% of the northeastern Canada/Greenland/Canada biogeographic population), Tringa totanus (3% of the eastern Atlantic biogeographic population), Arenaria interpres (1% of the western Palearctic population).         In the non-breeding season, supports 95,000 individual seabirds including: scaup Aythya marila, Slavonian grebe Podiceps auritus, golden plover Pluvialis apricaria, bar-tailed godwit Limosa lapponica, pink-footed goose Anser brachyrhynchus, shelduck Tadorna tadorna, red knot Calidris canutus, redshank Tringa totanus, turnstone Arenaira interpres, great-crested grebe Podiceps cristatus, cormorant Phalacrocorax carbo, red-throated diver Gavia stellata, curlew Numenius arquata, eider Somateria mollissima, long-tailed duck Clagnula hyemalis, common scoter Melanitta nigra, surf scoter Melanitta fusca, goldeneye Bucephala clangula, red-breasted merganser Mergus serrator, oystercatcher Haematopus ostralegus, ringed plover Charadrius hiaticula, grey plover Pluvialis squatarola, dunlin, Calidris alpina, mallard Anas platyrhynchos, lapwing Vanellus vanellus, and teal Anas Penelope.	7,065 m north east
Firth of Forth SSSI	The SSSI is designated for a range of habitats and species. The habitats include: maritime cliffs, salthmarsh, sand dunes, mudflats, saline lagoons, lowland neutral grassland, and the wider assemblage of vascular plants. Species include: the beetle assemblage, northern brown	7,065 m north

Site name	Reason for designation	Distance and direction from Site
	argus Aricia Artaxerxes, red-throated diver Gavia setllata, great crested grebe Podiceps cristatus, Slavonian grebe Podiceps auritus, cormorant Phalarocorax carbo, pink-footed goose Anser brachyrhynchus, shelduck Tadorna tadorna, mallard Anas platyrhynchos, wigeon Anas penelope, scaup Athya marila, eider Somateria mollissima, long-tailed duck Clangular hyemalis, common scoter Melanitta nigrai, velvet scoter Melanitta fusca, goldeneye Buceohala clangula, red-breasted merganser Mergus serrator, oystercatcher Haematopus ostralegus, ringed plover Charadrius hiaticula, golden plover Pluvialis apricaria, grey plover Pluvialis squatarola, lapwing Vanellus vanellus, knot Calidris canutus, dunlin Calidris alpina, bar-tailed godwit Limosa lapponica, curlew Numenius arquata, redshank Tringa totanus, turnstone Arenaria interpres, and sandwich tern Sterna sandvicensis.	
Pease Bridge Glen SSSI	Designated for upland oak woodland has existed for over 500 years and so qualifies as ancient woodland. Also noted for its assemblage of non-vascular plants.	7,210 m south east
River Tweed SAC	Features the Annex I habitat: water courses of plain to montane levels with <i>Ranunculion fluitanits</i> and <i>Callitricho-Batrachion</i> vegetation. Features the Annex I qualifying species: river lamprey <i>Lampetra fluviatilis</i> , brook lamprey <i>Lampetra planeri</i> , sea lamprey <i>Petromyzon marinus</i> , Atlantic salmon <i>Salmo salar</i> , and otter <i>Lutra lutra</i> .	8,230 m south
Old Cambus Quarry SSSI	Designated for geological reasons.	8,330 m south east
Siccar Point SSSI	Designated for geological reasons.	8,680 m south east
Abbey St Bathans Woodlands SSSI	Designated for upland oak woodland that has been present since the 12 <sup>th</sup> century. Also features a notable lichen assemblage including nationally scarce species.	9,600 m south

4.6 The desk study provided information on six non-statutory designated sites within 2 km of the Site, including two Scottish Wildlife Trust (SWT) Wildlife Sites and three East Lothian Local Biodiversity Sites (LBS). The SWT Wildlife Site overlaps with one of the LBS. These sites are summarised in Table 5. Sites are given in order of proximity to the development site, closest first.

Table 5:	Non-statutory	sites	within	2km	of the	Site
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Site name	Reason for designation	Distance and direction from Site
Dunglass Burn LBS	Features a water course through undisturbed broadleaved woodland habitats.	Adjacent to southern Site boundary
Thornton Burn SWT	Features a water course through a valley containing ancient woodland habitats.	<50 m south
Dry Burn Valley LBS	Features a water course through a valley containing ancient woodland habitats.	900 m north
Dry Burn SWT	Features a water course through a valley containing ancient woodland habitats.	900 m north
Thornton Glen SWT	Features a water course through a valley containing ancient woodland habitats and breeding woodland birds.	1100 m east
Thurston Burn Valley 2 LBS	Features a water course through a valley containing ancient woodland habitats.	1100 m east

4.7 The sites are designated for their steep wooded valley habitats and watercourses which support woodland flowers and breeding birds. Thornton Burn SWT and Dunglass Burn LBS, which overlap, form the southern boundary to the Site.

Evaluation

- 4.8 SACs, SPAs and Ramsars are evaluated as of International importance.
- 4.9 SSSIs are of National importance.
- 4.10 Local Biodiversity Sites are of **County importance**.

#### Mapped priority habitats

4.11 No mapped priority habitats were identified from the desk study.

#### Habitats within the Survey Area

4.12 Refer to Figure 1 in which is a composite habitat map, drawn from the results of the Extended Phase 1 habitat survey conducted by Josh Havlin. Supporting photographs can also be found in Appendix 2 of this report.

#### Arable land

- 4.13 The main habitat within the surveyed red line is arable fields, which form the majority of the composition at 17.2 ha. The field margins were either of negligible size or are considered separately within this report (semi-improved grassland and hedgerow).
- 4.14 At the time of survey, the eastern-most field was growing a cereal crop, the western-most field was split between growing a brassica crop on its eastern side, and bare ground across the rest of the field, presumably either left fallow or yet to be seeded. A third, smaller, field on the northern boundary was also bare. The arable fields were broadly free of arable weeds, but fumitory *Fumaria officinalis*, bittercress *Cardamine hirsuta*, ground ivy *Hederacea Glechoma*, and pineappleweed *Matricaria discoidea* were recorded.
- 4.15 Arable cropland is well represented within the landscape and is ordinarily of low value for biodiversity, with the exception of its potential to support breeding and wintering birds which is considered further in the bird section of this EcIA.

Evaluation of arable land

4.16 Arable cropland is of **negligible importance** and will not be assessed further in this report.

#### Hedgerows

- 4.17 There are six hedgerows present within the original survey area. The total length of hedgerow within the survey area is approximately 1.32 km.
- 4.18 Hedge one is located on the eastern boundary. Hedges two and three run north/south and separate three fields. Hedge four is located on the southern boundary. Hedge five separates two of the arable fields on the west side of the red line boundary, and Hedge six is located on the southern side of the red line boundary between two fences. Gaps within these hedgerows are infrequent and they appear stock proof.
- 4.19 Hedges two, three, four, and five contain hawthorn *Crataegus monogyna* exclusively, whilst Hedge 1 also contains elder *Sambucus nigra*. Hedgerow six contains hawthorn, blackthorn *Prunus spinosa*, and gorse *Ulex europaeus*.
- 4.20 Hedges one, two, three, four, and five are adjacent to poor semi-improved grassland field margins and the understorey resembles the habitat as described in this report.

**Evaluation of hedgerows** 

- 4.21 The hedgerows within the surveyed red line boundary conform to the description of priority hedgerows (Maddock 2011). The hedgerows are relatively species poor, largely dominated by hawthorn. The desk study shows that hedgerows are widespread in the local area due its rural/agricultural nature. The hedgerows on Site do provide a connective network into the wider area.
- 4.22 The habitat is assessed as **important at the Site level.**

#### Semi-improved grassland

- 4.23 Field margins of the two eastern most arable fields of the Site are composed of semi-improved grassland to a width of 25 m in parts, a total area of 4.02 ha.
- 4.24 These areas of grassland were found to be species poor. Grass species present included cock's foot *Dactylis glomerata*, perennial rye-grass *Lolium perenne*, annual meadow grass *Poa annua*, common bent grass *Agrostis capillaris*. Herb species found included common nettle *Urtica dioica*, ground ivy, creeping thistle *Cirsium arvense*, spear thistle Cirsium vulgare, broadleaved dock *Rumex obtusifolius*, lesser burdock *Arctium minus*, cleavers *Galium aparine*, red dead-nettle *Lamium*

*purpureum*, doves foot cranesbill *Geranium molle*, sow thistle *Sonchus arvensis*, and ragwort *Jacobaea vulgaris*. This species assemblage is typical of species poor semi-improved grassland.

Evaluation of semi-improved grassland

4.25 Species- poor semi-improved grassland is widespread within the surrounding landscape and is assessed as of **negligible importance.** This habitat will not be assessed further in this report.

#### Improved grassland

4.26 In the northern part of the Site there is an area of improved grassland which is 2.01 ha in total. This area of grassland is part of a larger field, only some of which is included within the red line boundary. At the time of survey, the grassland appeared to be used for grazing, though no livestock were in the field at the time. The sward was uniform in height and lush-green in colour. Species present in the field include perennial rye grass, rough meadow grass *Poa trivialis*, broadleaved dock and creeping buttercup *Ranunculus repens*.

Evaluation of improved grassland

4.27 Improved grassland is widespread within the surrounding landscape and is assessed as of **negligible importance**. This habitat will not be assessed further in this report.



#### Species / species groups

#### Barn owl

- 4.32 The desk study returned a single barn owl record within the 2 km search area from the last 10 years. The precise details of the record (age, location, etc.) are not available.
- 4.33 No evidence of barn owl was observed during any surveys nor were any features identified which would offer roosting or nesting opportunities. The field margins may provide limited foraging opportunities for the species but overall the majority of the habitat on Site is not suitable to support barn owl, due to the lack of food as well as no roosting/nesting opportunities close by.

Evaluation of barn owl

4.34 Taking records and survey results into account the Site is assessed as of **negligible importance** for barn owl and is scoped out of further assessment.

#### Bats

- 4.35 No records of bats were returned by the desk study.
- 4.36 The Site is relatively open and exposed, with no structures or trees present to offer potential roost features (Bat Tree Habitat Key 2018). Habitats present do not offer good foraging opportunities for bats due to the agricultural practices on Site, thus limiting foraging opportunities.
- 4.37 Hedgerows within the Site may be used by commuting bats within the landscape, aiding navigation between their roosts and the LBS/SWTSs which may offer more suitable foraging opportunities.

**Evaluation of bats** 

4.38 The proposal does not have the potential to significantly effect bat roosts, nor does it contain habitat which could provide opportunities for foraging, apart from the hedgerows which may also be used by locally commuting bats. The Site is assessed as of **negligible importance** for roosting bats and important for foraging and commuting bats at the **Site level**. Roosting bats are scoped out of further assessment in this report.

#### Breeding birds

Desk study results

4.39 Desk study results of birds which are recorded as qualifying criteria for nearby statutory designated sites are shown in Appendix 5.

Survey results

- 4.40 The hedgerows are suitable for a wide range of species whilst the arable land may be used by ground nesting species.
- 4.41 The four breeding bird surveys undertaken between March and June 2023, recorded 84 separate registrations of 27 different species. Only two species, blue tit *Cyaniste* ceruleus and skylark *Alauda arvensis*, were recorded with evidence of confirmed breeding territories (by the presence of fledged chicks).
- 4.42 There were 25 instances of 10 species which were considered to be probable breeders within the red line boundary and a 50 m survey buffer. Eleven species showed no indication of breeding on the Site and four species were considered to possibly be breeding in the vicinity of the Site. For the purposes of this assessment, on the precautionary approach probable breeding species have been treated as confirmed breeders. Based on the BTO standard breeding definitions (2023), 'possible breeding' species and 'non-breeding' species are considered to have been birds foraging in unsuitable breeding habitat, birds moving through the area or transient territories. As such possible breeders have been treated along with non-breeding registrations.
- 4.43 Of the 27 species recorded, 11 species were considered to be foraging or on passage and did not display any breeding or territorial behaviour during the surveys. Only three species robin *Erithacus rubecula*, song thrush *Turdus philomelos* and whitethroat *Curruca communis*, were listed as solely possible breeders based on the behaviours observed on survey, and small number of records it is likely these birds were breeding in the vicinity of the survey area, with territories around the periphery.
- 4.44 Ten species showed at least one instance of probable or confirmed breeding. Six of these were Birds of Conservation Concern (BoCC) green listed, two were BoCC amber listed and four were BoCC red listed (Stanbury *et. al.* 2021). Details of the BoCC red and amber listed likely territories are provided in Table 7 below:

Species	Scientific name	BoCC status	No. of likely or confirmed territories 2023
Grey Partridge	Perdix perdix	Red	1
Linnet	Linaria cannabina	Red	1
Skylark	Alauda arvensis	Red	10
Yellowhammer	Emberiza citrinella	Red	5
Coal tit	Periparus ater	Amber	1
Dunnock	Prunella modularis	Amber	1

Table 6: Red and Amber Species Territory Summary

Evaluation of birds – breeding

- 4.45 The species composition on Site is low hosting mostly common species (green listed), in small numbers. The number of amber listed species territories is also low and only single registrations of each species were recorded.
- 4.46 Red listed species were generally recorded in low numbers, the exceptions being skylark with 10 territories and confirmed breeding, and yellowhammer with five territories. Grey partridge and linnet were recorded on single occasions in suitable habitat.
- 4.47 The recorded assemblage lacked a number of key species considered to be part of a typical farmland bird assemblage, such as tree sparrow *Passer domesticus* and reed bunting *Emberiza schoeniculus*. The lack of these species is a further indication that the Site provides a relatively poor resource for breeding farmland birds.
- 4.48 Additional evidence that the Site is of low value to breeding birds is from the low numbers of confirmed breeding territories. Only two species were recorded as confirmed breeding on the Site. A single family of blue tit was present during the June survey and a single confirmed record of a juvenile skylark and a potential family group were recorded in June. Though four survey visits is lower than generally accepted by standard guidance, it is sufficient to locate evidence of nesting or fledged chicks Considering the Site's agricultural nature and proximity to hedgerows, scrub, streams and woodland greater numbers of species and a higher diversity would be expected. The low number of records may be due to the Site's intensive agricultural management practices.
- 4.49 Fuller (1980) evaluated sites with 25 49 breeding species as being of local value. Though this is an old paper it has not been superseded. Considering the declines suffered in bird populations over the last four decades the Fuller standard is often amended to consider sites hosting 25 or fewer species to be of local value. Twenty-seven species of birds were recorded within the survey area during 2023, only 10 of which were considered to have established breeding territories within the total survey area including the 50 m buffer, and only two of which were confirmed as having bred on Site. Those that could have bred were largely unsuccessful and the number of attempts per species was considered to be low. Based on the results of the breeding bird surveys it is not sensible to conclude that the site is more valuable than indicated by Fuller's guidance. As such, the breeding bird assemblage is assessed as **important at the Local level**.

#### Great crested newt

4.50 The desk study returned a single record of great crested newt. The record was from 2014 and an exact location was not available.

- 4.51 The habitat suitability survey categorised the pond as being of 'Average' suitability for great crested newt. Full details of this assessment can be seen below in Table 7. An eDNA survey confirmed presence of the species within the pond.
- 4.52 A population size estimate using torch survey and bottle trapping methods then proceeded. Full survey details for torch and bottle trapping surveys can be found in Appendix 6.
- 4.53 During torch surveys two individual great crested newts were recorded (female and male).
- 4.54 Bottle trapping surveys recorded eleven observations of great crested newt over the course of six surveys, with a peak count of five (three females and two males).

Pond number	1	
Grid reference	NT 72345 73	3089
	Value	Score
Geographic location	В	0.50
Pond area (m <sup>2</sup> )	2047	0.80
Desiccation rate	Sometimes	0.50
Water quality	Good	1.00
Shade (% of margin shaded 1m from bank)	35	1.00
Waterfowl	Minor	0.67
Fish population	Possible	0.67
Number of ponds within 1km	3	0.65
Terrestrial habitat	Poor	0.33
Macrophyte cover (%)	15	0.46
HSI score =	0.6	2
Pond suitability =	Avera	age

#### Table 7: Habitat suitability index results for great crested newt

Evaluation of great crested newt interest

- 4.55 Using <u>Great Crested Newt Mitigation Guidelines</u> (English Nature 2001) the pond is classed as supporting a population size class of "medium" but at the lower end of this size class.
- 4.56 Considering the results from the desk study which suggests that the population is either very sparsely distributed or under-recorded, the surrounding habitat survey results and the size class recorded the population of great crested newts is assessed as important at the **Local level**.

#### Otter

- 4.57 The desk study returned a single record of otter *Lutra lutra*, though an exact location was not provided.
- 4.58 There are no watercourses within the Site, although there is one present to the south of the Site, with suitable supporting terrestrial habitat and which could be affected by potential drainage works. The majority of terrestrial habitats within the Site are not suitable for otter as they are open and exposed, offering little opportunity for resting or shelter. The scrub outside the Site boundary to the south is more suitable for the species with fallen deadwood offering potential opportunities for otter resting sites. The presence of watercourses within the woodland areas (offsite) offers more suitable habitat for potential commuting routes and foraging opportunities.

#### Evaluation of otter

4.59 The Site is assessed to be of **Negligible importance** for otter when taking into account the habitat on Site.

#### Reptiles

- 4.60 The desk study provided no records of reptiles within 2 km of the Site.
- 4.61 The Site is not considered likely to support reptiles due to the intensive agricultural nature of the land. The arable fields and short field margins as well as lack of natural refugia are unlikely to provide sufficient cover foraging, basking or hibernation opportunities for reptiles. However, the area where potential drainage works may take place could offer some suitable habitat. No records of reptiles were returned by the desk study.

**Evaluation of reptile interest** 

4.62 The Site is assessed to be of **Negligible importance** for reptiles and is scoped out of further assessment.

#### Non breeding birds

4.63 The surveys are underway and will cover the period between October 2023 to March 2024 at a rate of one per month. The habitats within the Site are broadly suitable for an array of non breeding birds. The hedgerow and scrub habitats offer shelter for wintering and passage passerines, while the pasture may provide opportunities for wintering wildfowl and waders to forage.

Evaluation of birds - non breeding

- 4.64 Only two surveys had been completed at the time of writing this report. It is not possible to evaluate the importance of the Site for wintering birds until all surveys have been completed. The results of all the surveys will be submitted as an addendum to this report.
- 4.65 As such non breeding birds are not included in the detailed assessment of this report. An addendum detailing the results and impact assessment will be required.

#### Other species

4.66 In addition to four records from the desk study the habitats within the Site are suitable for brown hare *Lepus europaeus*. Several individual brown hares were recorded during surveys, with a peak count of eight individuals being recorded in the western-most field. See Target Notes 8, 9 and 11 (Appendix 3) and Figure 1. Brown hare will not be significantly impacted by the proposal as there is plenty of suitable habitat in the surrounding area and they are scoped out of further assessment.

### 5 Designed-in Avoidance, Mitigation, Compensation and Enhancement Measures

#### Designed-in mitigation and other measures

- 5.1 Details of work necessary to retain, create and manage new and retained ecological features during and on completion of the construction phase will be provided in a Construction and Environmental Management Plan (CEMP) or equivalent. It is recommended that the production of such a document, and its approval by the Energy Consents Unit and East Lothian Council, is subject to an appropriately worded planning condition. It would cover all designed-in mitigation as well as any additional ecology mitigation detailed later in this report.
- 5.2 Designed-in mitigation includes the following avoidance and impact minimising measures:

#### Ecological clerk of works

- 5.3 An Ecological Clerk of Works (ECoW) will be appointed to ensure compliance with any guidance, plans or working method statements that might be required (for instance the ecological aspects of a CEMP). The ECoW will provide briefings to all relevant personnel; provide advice in the event of any unforeseen protected species or sensitive habitat issue that might arise during the project; and oversee the implementation of mitigation, compensation and enhancement measures.
- 5.4 All proposed mitigation, compensation and enhancement measures detailed below for habitats, protected species and any other sensitive or important features will be incorporated into a Habitat Management and Monitoring Plan. It is anticipated that this would be the subject of a planning condition.

#### Pre-works checks

#### 5.5



- 5.6 Great crested newt: newts are not expected within the Site due to its poor habitat suitability for the species. However, a precautionary non-licenced method statement is recommended to address the clearance of the Site.
- 5.7 Otter: due to established presence in the landscape and the high mobility of this species, a pre-works check should be undertaken before any works take place. This is to ensure that no evidence of use by otters is present along the watercourse or in the surrounding woodland, and which could potentially be affected by the (as yet undesigned) drainage from the Site into the watercourse. The timing of this check would need to be at least 2 months in advance of works commencing to allow sufficient time for the check, any follow-up detailed survey (if required) and a licence application (if required) to be made to and granted by NatureScot, and to be implemented according to the terms of that licence (if required).
- 5.8 Breeding birds: All works involving the disturbance or destruction of any areas capable of supporting breeding birds should take place outside of the breeding season, which generally extends from mid-March to August. However, it should be noted that some species can commence breeding earlier or continue breeding efforts beyond this period. Should works need to take place during the bird breeding season the area should be checked for nesting birds by a suitably qualified ecologist. If nesting birds are detected, then work in that area should be delayed until the birds and their young have dispersed are a buffer zone appropriate for the species be put in place.

### 6 Ecological Impacts, Additional Mitigation and Residual Effects

- 6.1 This section considers the potential effects of the proposed development on key ecological features (designated sites, habitats and species). The assessment of impacts is carried out in stages. Impacts are assessed firstly in the absence of mitigation (but taking into account any designed-in mitigation see below) and then with further mitigation, compensation and enhancement considered.
- 6.2 Taking into account the designed-in mitigation described above, consideration is given to the impacts and effects of the proposed works as a whole on each of the important ecological features.
- 6.3 Where further mitigation and other measures are required, these are then described.
- 6.4 Residual effects are then described for each important feature, taking into account the measures designed into the development and any further mitigation measures that will be committed to by way of appropriately worded planning conditions or other appropriate agreement.

#### **Designated sites**

- 6.5 Several of the SSSI's within the 10 km search area are designated purely for their geological interest. These include Barns Ness Coast (>2 km), Pease Bay Coast (>4 km), Old Cambus Quarry (>8 km) and Siccar Point (>8 km). The development will not have any impact on these features and as such these sites are not considered further in this report.
- 6.6 Several of the SSSI's within the 10 km search area are designated for the presence of their woodland habitats. These include Lammermuir Deans (>2 km) (also designated for its geological interest, grassland and fen habitats), Woodhall Dean (>3 km), Rammer Cleugh (>5 km), Pease Bridge Glen (>7km) and Abbey St Bathans Woodlands (>9 km). There are no impact pathways from the proposal that would result in a significant effect on these sites and as such they are not considered further in this report.
- 6.7 The River Tweed SAC (>8 km) is located within a different catchment to the Site meaning that the Site will not impact the qualifying features of the SAC, and as such is not considered further in this report.
- 6.8 The Outer Firth of Forth and St Andrews Bay Complex SPA (>2 km), Firth of Forth Ramsar (>6 km), Firth of Forth SPA (>6 km) and Firth of Forth SSSI (>7 km) are primarily designated for the breeding and non breeding bird assemblages, see Table 4. Impacts on the international designated sites will be assessed in the Habitat Regulations Appraisal (HRA) Report which will also address impacts on the SSSI by default as the bird species captured with in the Ramsar site and the SPA's overlap with the SSSI. Non-breeding surveys are underway and are required to inform the HRA and in turn this assessment.
- 6.9 The breeding bird assemblage recorded on the Site is farmland in nature. The only species for which the sites above are designated which was recorded on Site was lapwing and pink footed goose commuting high overheard, with the exception of a single record of four geese flying low in September.
- 6.10 Assessment of impacts and mitigation measures cannot be made at this stage. This report will be updated once the non-breeding bird surveys are completed (March 2024).
- 6.11 All six of the locally designated sites are designated for their watercourses and woodland habitats.
- 6.12 The Dunglass Burn LBS and Thornton Burn SWT largely occupy the same area to the south of the Site. Works taking place within the Site have the potential to impact the watercourse, Braidwood burn, before it enters the Thornton Burn and ultimately empties into the North Sea at Thorntonloch.
- 6.13 Dry Burn Valley LBS and Dry Burn SWT are located uphill of the Site and are within a different river catchment and will not be impacted directly or indirectly by the scheme.

- 6.14 The indicative landscape masterplan (see Appendix 7) shows two drainage easements, directing drainage to the south of the Site, exact details are unknown at this stage. Based on the landscape drawing there is potential for impacts to both grassland and scrub as well as the watercourse itself all of which sit within boundary of The Dunglass Burn LBS and Thornton Burn SWT.
- 6.15 During the construction phase of the development there is the potential for dust deposition within the woodland to the immediate south of the Site.

#### Mitigation and enhancement proposals

- 6.16 To mitigate the potential effects on the adjacent LBS/LWSs a construction management plan will be produced detailing the dust and silt collection techniques that would be put in place during the construction phase.
- 6.17 The measures that are likely to be put in place during the construction phase are:
  - Silt traps downhill of any works;
  - In any period of dry weather, deploy heras fencing with dust sheets; and
  - In any period of prolonged dry weather, damping down of areas which see heavy plant activity.
- 6.18 Further survey of the areas affected by the drainage infrastructure (outside of the red line boundary) will be required to inform the route and working method statements as well as reinstatement works.

#### Residual effects on internationally designated sites

6.19 Until the results of the non breeding bird surveys are understood no conclusion can be made in terms of effects on The Outer Firth of Forth and St Andrews Bay Complex SPA, Firth of Forth Ramsar, Firth of Forth SPA.

#### Residual effects on nationally designated sites

6.20 Until the results of the non breeding bird surveys are understood no conclusion can be made in terms of effects on the Firth of Forth SSSI.

#### Residual effects on locally designated sites

6.21 Until the outfall options are agreed and understood no conclusion can be made of effects on the local sites.

#### Habitats

- 6.22 Hedgerows within the surveyed red line do meet the description for priority hedgerows, however, despite this they are species poor and offer limited foraging opportunities for species.
- 6.23 The development will lead to the loss of hedgerows three and five on the Site which equates to a loss of approximately 420 m based on the landscape masterplan provided by the client in Appendix 7. As is set out below, this loss is displaced by new hedgerow planting.
- 6.24 In the absence of further mitigation and working methods, this will result in a permanent adverse effect that will be significant at the Site level.

#### Mitigation and enhancement proposals

6.25 Hedgerow planting is included as part of the landscape design proposal, totalling 3,771 m as well as enhancement of retained hedgerows totalling 383 m and planting of 110 native species hedgerow

trees. A native species mix will be used to mitigate the loss of 420 m of species poor hedgerows and will include hedgerow trees.

#### Residual effects: hedgerow

6.26 The mitigation measures described above are likely to reduce the effects on hedgerows to a level that is **not significant and will provide a gain for the habitat.** 

#### Species

#### Potential impact on bats (foraging and commuting)

- 6.27 The proposed scheme will lead to the temporary loss of foraging and commuting habitat.
- 6.28 In the absence of further mitigation measures this will result in a **permanent adverse effect that will be significant at the Site level.**

#### Mitigation and enhancement proposals

- 6.29 There is the potential for disturbance-related impacts to retained roosts, and to retained foraging habitat through light spill. The installation of lighting will be minimised as far as possible and no lighting adjacent to woodland or aquatic habitat is proposed. Where lighting cannot be avoided it will be in line with the following (BCT and ILP, 2023):
  - Consideration of the type of lighting that is used narrow spectrum lights with no UV content, warm white LED and directional down lighting should be favoured.
  - Reducing light spill where possible through appropriate choice of light.
  - The use of light barriers to prevent light spillage, this can include physical barriers such as fences and also vegetation planting.
  - The use of lighting controls to ensure that lights are only in use when required.
- 6.30 Though the initial loss of hedgerows will likely make the Site less favourable for commuting and foraging bats the proposals within the landscape plan (Appendix 7) to create species rich grassland, woodland and native hedgerows which will improve the foraging suitability of the habitat within the Site.

#### Residual effects: bats

6.31 The measures described above are likely to reduce the effects on foraging and commuting bats to a level that is **not significant and potentially provide an overall gain for bats in the area**.

#### Potential impact on breeding birds

- 6.32 The proposed scheme will lead to the loss of 17.2 ha of arable land and approximately 420 m of hedgerow with associated nesting opportunities for passerines and ground nesting farmland birds.
- 6.33 There will be a direct loss of bird foraging and commuting habitats during the construction phase of the development. It is also possible that retained habitats outside but adjacent to the Site boundary may experience a reduction in their suitability for nesting birds due to disturbance arising from construction activities. Temporary disturbance could occur as a result of noise, vibration and visual disturbance from mobile plant and people. Temporary disturbance has the potential to result in the displacement of birds, the abandonment of nests and increased predation risk to eggs and young.

- 6.34 The construction of a BESS facility and planting of woodland on arable farmland will reduce the available nesting habitat for a range of species including skylark and grey partridge. This may have the potential to effect as many as 10 confirmed skylark territories recorded within the Survey Area.
- 6.35 During the operational phase of the development any new lighting, additional noise or other exterior lighting scheme has the potential to impact nesting birds without mitigation. Light spillage onto retained habitat may deter birds from nesting in areas that were previously utilised, and it may affect normal diurnal behaviour of birds (Kempenaers et al., 2010).
- 6.36 In the absence of further mitigation measures this will result in a **permanent adverse effect that will be significant at the Site level**.

#### Mitigation and enhancement proposals

- 6.37 If it is necessary to remove any habitat within the Site that may be used by nesting birds, this could have an adverse impact on active nests if carried out during the breeding bird season (which is generally between late February and mid-August inclusive). In order to avoid committing an offence, it is recommended that any work affecting bird nesting habitat is carried out between late August and mid-February, which would avoid the bird breeding season.
- 6.38 If work affecting bird nesting habitat has to take place during the bird breeding season, then the relevant area of the Site will be surveyed for active bird nests by a suitably qualified ecologist before the proposed work is carried out. If active bird nests are present, then work would have to be delayed in that area until nesting activity ceases. It should be noted that this can be a period of up to 6 weeks and that some species can have two broods.
- 6.39 The landscape plan (see Appendix 7) includes the creation of 3.7 ha of tussocky meadow grass. This habitat can be used by skylark and grey partridge for breeding, which may nest within short grass tussocks. This habitat should be managed to support its use by breeding skylark and other farmland birds, the details of creation and management should be laid out in an accompanying Habitat Management Plan. The landscape plan also includes the creation of 1.6 ha of species rich grassland, this may not provide nesting habitat for the species but may provide suitable foraging habitat with proper management, as set out in an accompanying Habitat Management Plan.
- 6.40 It is unlikely that the 3.7 ha of tussocky meadow grass will fully mitigate the loss of 17.2 ha of arable land used by the existing breeding birds and in particular the 10 skylark territories, and as such it is recommended that skylark plots in neighbouring arable fields are created to mitigate the impact of the development on this species. The method to be applied to increase the ability of the off-Site fields to support nesting territories of skylark is the inclusion of 'skylark plots'. These are small undrilled patches within cereal fields that provide access for skylark into tall, dense, winter cereal crops to nest and forage. The published evidence is that skylark plots at a density of 2 plots/ha will increase the population of skylark in each field (Donald & Morris, 2005). Agricultural fields within the landowners and applicant's control excluding the Site total approximately 150 ha. The landowner has agreed to introduce a mix of skylark plots and wider field margins to address impacts on farmland birds. The exact location and number of plots as well as the field margin size, location and species mix should be identified in a HMP and be created following the Royal Society for Protection of Birds (RSPB) promoted guidance to farmers.
- 6.41 New artificial lighting, in particular boundary and woodland edge habitat, and the new landscaped habitats within the Site, will be kept to a minimum, and directed to avoid light spillage on these areas. Any scheme should employ low pressure sodium lamps or other lighting with a low UV component, where lighting is necessary.
- 6.42 The landscape plans identify 1.4 ha of deciduous woodland and 1.2 ha of native shrub mix to be planted and 3,771 m of newly created hedgerow with trees. All planting will consist of native species.
- 6.43 The seeds and tree saplings will be of local provenance. These habitats will provide an increase in biodiversity over the existing intensively farmed arable land. The woodland and scrub will provide habitats and foraging resources for invertebrates, and insectivorous birds. Additionally depending on

the species planted a significant improvement in foraging resource could be provided for wintering birds.

#### Residual effects: breeding birds

6.44 The mitigation measures described above are likely to reduce the effects on breeding birds to a level that is **not significant and potentially provide an overall gain for farmland birds in the area**.

#### Potential impact on great crested newt

- 6.45 No ponds are present on Site and impacts on a breeding site are highly unlikely, as there will be no direct impacts on the pond where newts are present. Great crested newts are mobile species moving across the landscape between breeding, foraging and hibernating habitat. The pond where newts are present is within commutable distance for the species (180 m). The arable fields and small areas of improved grassland within the Site is poor terrestrial habitat and unlikely to be used by migrating great crested newt. However, should the drainage work or any works extend south outside of the red line the habitat in this location (using aerial photography) appears suitable for hibernating and commuting newts (this area has not been surveyed as part of this application).
- 6.46 In the absence of further mitigation and working methods, this will result in a permanent adverse effect that will be **significant at the Site level**.

#### Mitigation/enhancement proposals

6.47 Despite the Site providing unsuitable habitat for the species a non-licenced method statement is advised in the unlikely event that a newt is found. The method statement will cover the legal protection afforded to species, safe working methods to be followed to avoid harming individual newts (including when moving stored materials such as pipes), and what to do if a newt is found on Site during the works. The method statement will be targeted to the phases of works where they are most likely to be affected, namely vegetation clearance and the moving of construction materials. Measures to employed during vegetation clearance will include a two-phase cut and fingertip searching of the areas to be cleared. This guidance should be included within the CEMP for the development.

#### Residual effects: great crested newt

- 6.48 The measures described above are likely to reduce the effects on great crested newts to a level that is **not significant**.
- 6.49 It should be noted that this assessment may change once the drainage plans and location are known because newts could be present with the scrub and tall ruderal habitat immediately south of the Site. A NatureScot licence may also be required to legally undertake works in this area.



#### Mitigation / enhancement proposals

6.54 It is recommended that the sett is assumed to be active. On a precautionary basis a 30 m exclusion zone will be set up around the possible sett is to be erected to minimise potential disturbance during the construction phase. Sensitive habitat management to create tussocky grassland can take place within this area, provided it is done by hand and without the need for heavy machinery.



#### Potential impacts on otter

- 6.59 There are nearby watercourses which may be used by otter however, no evidence of them was recorded on Site. Otter is unlikely to be resident on the Site due to unsuitable habitat for the species.
- 6.60 Currently exact drainage details are unknown and should they extend south into the watercourse there could be impact on the species.
- 6.61 In the absence of further mitigation and working methods, this will result in a permanent adverse effect that will be **significant at the Site level.**

#### Mitigation / enhancement proposals

6.62 A precautionary pre works check of the Site is to be undertaken prior to any works commencing. The timing of this check would need to be at least 2 months in advance of works starting to allow sufficient time to do the initial checking survey and any follow-up detailed survey (if required) and a licence application (if required) to be made. This is to assess if there has been any substantial change to the way the Site is used by otter since the completion of the original survey and works commencing as well as any changes or additions as a result of drainage.

#### Residual effects: otter

6.63 Until the final design options are agreed and understood for drainage no conclusion can be made regarding effects on Otter. A check prior to work on Site will take place to confirm status of the species. If evidence is found, then appropriate measures to safeguard the species will be put in place.

## 7 Conclusion

- 7.1 To assist with the planning determination process further information is required and this will be captured in an addendum to this report.
  - Non breeding bird surveys to be completed, the results analysed, impacts assessed and mitigated as appropriate.
  - Final design and location of drainage to be provided, this may result in further botanical and otter surveys and could result in a NatureScot great crested newt licence being required to lawfully proceed with the works.
  - Further survey is required of the access track where widening is due to take place to ensure no significant effects on species or habitats will be experienced.

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## **Appendix 1: Figures**

Figure 1: Phase 1 habitat map Figure 2: Statutory designated sites Figure 3: Non statutory designated sites Figure 4: Ponds within 500m Figure 5: Breeding bird territories Overleaf



Legend

Site boundary

Target note

----- Intact hedge - species-poor

Fence

----- Wall

Scrub - dense/continuous

Improved grassland

B Poor semi-improved grassland

Standing water

A Cultivated/disturbed land - arable



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PROJECT TITLE BRAXBESS STORAGE SITE

#### DRAWING TITLE Figure 1: Phase 1 Habitat Map

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DRAWN: BH	APPROVED: IH	VERSION:1.0

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Sources: BSG Ecology survey data



Legend

Site boundary

10km from site boundary

Ramsar

Sites of Special Scientific Interest

Special Protection Areas

Special Areas of Conservation

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PROJECT TITLE BRAXBESS STORAGE SITE

#### DRAWING TITLE Figure 2: Statutory sites within 10km

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DRAWN: BH	APPROVED: IH	VERSION:1.0

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Legend

Site boundary

2km from site boundary

Local Biodiversity Sites (LBS)

Scottish Wildlife Trust

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PROJECT TITLE BRAXBESS STORAGE SITE

#### DRAWING TITLE Figure 3: Non-statutory Sites within 2 km

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## Figure 4: Ponds within 500m

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673000			C	Co	BTO Cod B. BT BZ C. CC CC CH CT D. GO	le Common Name Blackbird Blue Tit Buzzard Carrion Crow Chiffchaff Chaffinch Coal Tit Dunnock Goldfinch	PH PW R. RL S. SD SL ST W. WH	CH Pheasant Pied Wagtail Robin Red-legged Partridge Skylark Stock Dove Barn Swallow Song Thrush Northern Wheatear Whitethroat
0 100	200	300 m	372000		L. LI MP P.	Lapwing Linnet Meadow Pipit Grey Partridge	WP WR WW Y.	Woodpigeon Wren Willow Warbler Yellowhammer





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PROJECT TITLE BRAXBESS STORAGE SITE

#### DRAWING TITLE Figure 5: Breeding Bird Territories

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DRAWN: BH	APPROVED: IH	VERSION:1.0

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Sources: BSG Ecology survey data

## Appendix 2: Photo sheet

### Photo sheet from Phase 1 habitat survey 21 March 2023

Photo 1: Pond 1	
Photo 3: manure pile	Photo 4: log pile
Photo 5: sprout field	Photo 6: field margin and hedge 2

## **Appendix 3: Target Notes**

Table A3.1 below describes the target notes listed in Figure 3, Appendix 1.

Target note (per Figure 3)	Description
1	Displaying skylark
2	Brown hare sighting (1 no. individuals)
3	Manure pile
4	Log piles
5	Farm equipment
8	Brown hare sighting (2 no. individuals)
9	Brown hare sighting (3 no. individuals)
10	Displaying skylark
11	Group of 8 no. brown hare
12	Singing yellowhammer

Table A3.1: Target note descriptions

## Appendix 4: Summary of relevant legislation

The revised and updated Scottish Planning Policy (SPP) was adopted by the Scottish Government in 2014. The SPP sets out planning policies including those that relate to the protection of biodiversity. A summary of key policies within the SPP that relate to biodiversity are set out below.

The Scottish Planning Policy introduces a presumption in favour of development that contributes to sustainable development. This means that policies and decisions should be guided by a number of principles that are set out within the SPP, and these include the need to protect, enhance and promote access to natural heritage, including green infrastructure, landscape and the wider environment (summarised in Paragraphs 28 and 29).

In Paragraph 195, the SPP notes that planning authorities, and all public bodies, have a duty under the Nature Conservation (Scotland) Act 2004 to further the conservation of biodiversity. This duty must be reflected in development plans and development management decisions. They also have a duty under the Water Environment and Water Services (Scotland) Act 2003 to protect and improve Scotland's water environment.

International, national and locally designated areas and sites as outlined in the SPP (Paragraph 196) should be identified and afforded the appropriate level of protection in development plans.

Paragraph 200 relates to the sensitivity of wild land and states that plans should identify and safeguard the character of areas of wild land as identified on the 2014 SNH map of wild land areas. Paragraph 215 states that development may be appropriate in wild land in some circumstances; significant effects would need to be substantially overcome by siting, design or other mitigation.

Development management decisions should take account of potential effects on landscapes, the natural and water environment, including cumulative effects (Paragraph 202). Developers should seek to minimise adverse impacts through careful planning and design, considering the services which the natural environment is providing and maximising the potential for enhancement.

Planning permission should be refused where the nature or scale of proposed development would have an unacceptable impact on the natural environment. Direct or indirect effects on statutorily protected sites will be an important consideration, but designation does not impose an automatic prohibition on development (Paragraph 203).

Paragraph 207 and the need for "appropriate assessment" for any development plan or proposal likely to have a significant effect on Natura 2000 sites (Special Areas of Conservation (SACs) and Special Protection Areas (SPAs)).

The presence (or potential presence) of a legally protected species is an important consideration in decisions on planning applications (Paragraph 214). The level of protection afforded by legislation must be factored into the planning and design of development and any impacts must be fully considered prior to the determination of an application.

Ancient semi-natural woodland is an irreplaceable resource and, along with other woodlands, hedgerows and individual trees, should be protected from adverse impacts resulting from development (Paragraph 216).

#### Local plan policies East Lothian Local Development Plan, Written Statement, 2018

The following local plan policies are all potentially relevant to the proposed development:

#### Policy NH1: Protection of Internationally Designated Sites

Development proposals unconnected to the conservation management of a Natura 2000 or Ramsar site, that are assessed by the competent authority as likely to have a significant effect on the integrity of a Natura 2000 site or Ramsar site (including proposals outwith the boundary of the designated site) will be subject to Appropriate Assessment. Applicants for such development must provide any information requested by the competent authority to enable it to carry out the Appropriate Assessment, including any project specific information and masterplan.

Where the Appropriate Assessment cannot rule out adverse effects upon the integrity of a Natura 2000 or Ramsar site, the proposal will only be permitted where:

a) there are imperative reasons of over-riding public interest and there are no alternative solutions; and

b) compensatory measures are provided to ensure that the overall coherence of the Natura 2000 network is protected.

Candidate Natura 2000 sites will be treated as if they were already designated.

#### <u>Policy NH2: Protection of Sites of Special Scientific Interest and Geological Conservation Review</u> <u>Sites</u>

Development that would adversely affect a Site of Special Scientific Interest or Geological Conservation Review site will only be permitted where it can be demonstrated that:

a) the objectives of designation and overall integrity of the site will not be compromised;

b) any significant adverse effects on the qualities for which the area has been designated are clearly outweighed by social, economic or environmental benefits of national importance;

c) there are no alternative solutions; and

d) appropriate mitigation will be provided.

Where proposals affect non-notified features within a site, this will be considered against criteria in Policy NH3.

#### Policy NH3: Protection of Local Sites and Areas

Local Biodiversity Sites and Local Geodiversity Sites are designated as Local Nature Conservation Sites, as shown on the Proposals Map. Details of these sites are set out in Technical Note 10: Planning for Biodiversity (2016) and Technical Note 11: Planning for Geodiversity (2016).

Development that would adversely affect the interest of a Local Nature Conservation Site, Local Nature Reserve or Country Park will only be permitted where it is demonstrated that any damage to the natural heritage interest or public enjoyment of the site is outweighed by the economic, social or environmental benefits of the development and suitable mitigation will be secured.

#### Policy NH4: European Protected Species

Proposals that may have an impact on European protected species will only be permitted where:

- a) there are imperative reasons of overriding public interest or for public health and safety;
- b) there is no satisfactory alternative;
- c) favourable conservation status of the species can be maintained; and

d) A species protection plan has been submitted, which is based on survey results and includes details of the status of European protected species on site and how possible adverse effects are to be mitigated.

#### Policy NH5: Biodiversity and Geodiversity Interests, including Nationally Protected Species

Developers must demonstrate, where relevant, how impacts on biodiversity and geodiversity have been addressed as part of their proposals. Sufficient supporting information should be submitted.

New development that would result in:

a. an adverse impact to nationally protected species;

b. an adverse impact to the biodiversity value of the development site or the surrounding area (for example through fragmentation or loss of habitat); or

c. serious damage to or destruction of a significant geodiversity feature;

will only be permitted where the loss is clearly outweighed by the public benefit of the development and suitable mitigation has been proposed and will be secured. Proposals should indicate how they have had regard to the mitigation hierarchy, the potential for incorporating biodiversity or geodiversity features within the site into the proposal in a positive way where appropriate, and for providing onsite or off-site enhancements. Where relevant, a species protection plan based on survey results must be submitted including details of the status of nationally protected species on site and how possible adverse effects will be mitigated.

#### Scottish wildlife legislation

In Scotland wildlife is afforded protection via a range of legal instruments. The key Acts and Regulations, which have been taken into account throughout this assessment, are as follows:

- Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)
- The Conservation of Habitats and Species Regulations 2017 (as amended)<sup>6</sup>
- Wildlife and Countryside Act 1981 (as amended)
- Nature Conservation (Scotland) Act 2004 (as amended)
- The Protection of Badgers Act 1992

#### European protected sites

In respect of European protected sites, any HRA required would be in accordance with the requirements of Regulation 48 of the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended in Scotland by the Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2019.

The Conservation of Habitats and Species Regulations 2017 only apply to specific reserved and devolved activities on land in Scotland, and in Scottish inshore waters, including for consents under sections 36 and 37 of the Electricity Act 1989.

#### Protection of Badgers Act 1992 (as amended)

The 1992 Act protects badgers and their setts. It has been amended by the Nature Conservation (Scotland) Act 2004 under Schedule 6 (26). In summary, offences under this legislation are:

- Wilfully taking, injuring or killing badgers
- Cruelty; selling and possession; marking and ringing
- Intentionally or recklessly interfering with a badger sett (interfering with a badger sett includes damaging or destroying a badger sett or any part of it, obstructing access to a sett, disturbing a badger whilst it is in a sett, or causing or allowing a dog to enter a badger sett

#### European protected species

The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended in Scotland) transpose the EC Habitats Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Council Directive 92/43/EEC) into national law.

"European protected species" (EPS) are those which are present on Schedule 2 of the Regulations. They are subject to the provisions of Regulation 39. In summary, this legislation makes it an offence to:

- capture, injure or kill a wild animal EPS
- to disturb such an animal while it is occupying a structure or place it uses for shelter or protections

<sup>&</sup>lt;sup>6</sup> In so far as they apply to Scotland, see Regulation 2 of 2017 Regulations for provisions relevant to Scotland.

- to disturb such an animal while it is rearing or otherwise caring for its young
- to obstruct access to a breeding site or resting place of such an animal or to otherwise deny the animal use of the breeding site or resting place
- to disturb such an animal in a manner that is, or in circumstances which are, likely to significantly affect the local distribution or abundance of the species to which it belongs
- to disturb such an animal in a manner that is, or in circumstances which are, likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young.

Although the law provides strict protection to these species, it also allows this protection to be set aside (derogation) through the issuing of licences. The licences in Scotland are currently determined by Scottish Natural Heritage (SNH) for development works. In accordance with the requirements of the Regulations, a licence can only be issued where the following requirements are satisfied:

- that there is no satisfactory alternative, and
- that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

#### Protected species - Wildlife and Countryside Act 1981 (as amended in Scotland)

Protected animals are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended in Scotland), (all EPS are also protected under the 1981 Act). In summary, this legislation makes it an offence to intentionally or recklessly:

- Kill, injure or take any wild animal listed on Schedule 5
- Damage, destroy or obstruct access to any structure or place which such an animal uses for shelter or protection or to disturb such an animal when it is occupying a structure or place for that purpose.

All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended in Scotland) which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition, it is an offence to disturb any wild bird listed on Schedule 1 of the act whilst it is building a nest or is in, on, or near a nest containing eggs or young, or whilst lekking; or to disturb the dependent young of any wild bird listed on Schedule 1.

#### Species and habitats of principal importance

Section 1 of the Nature Conservation (Scotland) Act 2004 states that 'It is the duty of every public body and office-holder, in exercising any functions, to further the conservation of biodiversity so far as is consistent with the proper exercise of those functions'. To assist with this objective Section 2(4) of the Act sets out the requirement to publish a list of flora and fauna considered to be of principal importance in Scotland.

The list required under Section 2(4) of the Act has now been published and includes a diverse range of habitats and species<sup>7.</sup> The measures required to protect these species and habitats are set out in the document 'Scotland's Biodiversity: It's in Your Hands - A strategy for the conservation and enhancement of biodiversity in Scotland' (Scottish Executive, 2004). Biodiversity Targets are outlined in the 'Strategic Plan for Biodiversity 2011-2020' (Scottish Government, 2013). The two documents together comprise the Scottish Biodiversity Strategy.

<sup>&</sup>lt;sup>7</sup> The list is published at: <u>https://www.nature.scot/scottish-biodiversity-list</u>

|--|

Common name	Scientific name	Number of records	Firth of Forth SPA non breeding qualifying feature	Firth of Forth SPA breeding qualifying feature	Firth of Forth Ramsar non breeding qualifying feature	Firth of Forth Ramsar breeding qualifying feature	Outer Firth of Forth and St Andrews Bay Complex SPA non breeding qualifying feature	Outer Firth of Forth and St Andrews Bay Complex SPA breeding qualifying feature	Firth of Forth SSSI non- breeding qualifying feature	Firth of Forth SSSI non- breeding qualifying feature	BoCC 5 Status
Arctic tern	Sterna paradisaea	4						$\checkmark$			
Bar-tailed godwit	Limosa Iapponica	14	$\checkmark$		$\checkmark$				$\checkmark$		
Black-headed gull	Chroicocephalus ridibundus	77						$\checkmark$			-
Common guillemot	Uria aalge	19						$\checkmark$			-
Common gull	Larus canus	69						$\checkmark$			_
Common scoter	Melanitta nigra	2	~				$\checkmark$		$\checkmark$		
Cormorant	Phalacrocorax carbo	93	~						$\checkmark$		
Curlew	Numenius arquata	89	~						$\checkmark$		
Dunlin	Calidris alpina	41	$\checkmark$						$\checkmark$		
Eider	Somateria mollissima	76	$\checkmark$				$\checkmark$		$\checkmark$	$\checkmark$	-
Golden plover	Pluvialis apricaria	14	$\checkmark$						$\checkmark$		-

Goldeneye	Bucephala clangula	8	$\checkmark$	~	$\checkmark$		$\checkmark$	
Great crested grebe	Podiceps cristatus	1	$\checkmark$				$\checkmark$	
Grey plover	Pluvialis squatarola	16	~				~	
Herring gull	Larus argentatus	123				$\checkmark$		
Knot	Calidris canutus	5	$\checkmark$	$\checkmark$			$\checkmark$	
Lapwing	Vanellus vanellus	9	$\checkmark$				$\checkmark$	
Long-tailed duck	Clangula hyemalis	4	$\checkmark$		$\checkmark$		$\checkmark$	
Kittiwake	Rissa tridactyla	14				$\checkmark$		
Mallard	Anas platyrhynchos	60	$\checkmark$				$\checkmark$	
Manx shearwater	Puffinus Puffinus	3				$\checkmark$		
Gannet	Morus bassanus	68		$\checkmark$	$\checkmark$	$\checkmark$		
Oystercatcher	Haemotopus ostralegus	114	$\checkmark$				$\checkmark$	
Pink-footed goose	Anser brachyrhynchus	22	$\checkmark$	$\checkmark$			$\checkmark$	
Puffin	Fratercula arctica	9		$\checkmark$		$\checkmark$		
Razorbill	Alca torda	11				$\checkmark$		
Red-breasted merganser	Mergus serrator	26	$\checkmark$		$\checkmark$		$\checkmark$	
Redshank	Tringa totanus	91	$\checkmark$	$\checkmark$			$\checkmark$	
Red-throated diver	Gavia stellata	8	$\checkmark$		$\checkmark$		$\checkmark$	

Ringed plover	Charadrius hiaticula	39	$\checkmark$			$\checkmark$	$\checkmark$	
Shelduck	Tadorna tadorna	31	$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$	
Slavonian grebe	Podiceps auritus	1	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		
Turnstone	Arenaria interpres	50	$\checkmark$	$\checkmark$		$\checkmark$		
Velvet scoter	Melanitta fusca	3	$\checkmark$		$\checkmark$	$\checkmark$		

Appendix 6: Great crested newt survey details

Dates	Start Time	Sunse	Sunrise	End Time	Air Temp	Rain	Cloud	Wind	Water Temp	Turbidity	Vegetation Cover	Torch Survey*	Bottle Survey
02/05/2023	19:00	20:50		21:35	7	0	6	2	12	2	4	Lv male x 1 Lv/Lh female x 1	
03/05/2023	06:30		05:22	07:45	8	o	3	1	9	2	4		Tc female x 1 Lv female x 2 Lv male x 2 Lh female x 5 Lh male x 4 Bb tadpoles x 2
09/05/2023	19:30	21:04		22:20	11	0	1	2	12	2	4	Tc female x 1 Tc male x 1 Lv male x 1	
10/05/2023	06:25		05:07	07:40	9	0	1	2	9	2	4		Tc female x 1 Tc male x 2 Lv female x 1 Lv male x 2 Lh female x 6 Lh male x 5
20/05/2023	20:00	21:24		22:50	14	1	8	0-1	12	2	4	Lv male x 1 Lv/Lh female x 1	
21/05/2023	06:40		04:48	07:45	12	1	6	2	13	2	4		Tc female x 3 Tc male x 2 Lv female x 4 Lv male x 3 Lh female x 3 Lh male x 4

26/05/2023	20:30	21:34		22:30	12	0	1	2-3	14	2	4+	Lh male x 1	
27/05/2023	06:30		04:38	07:30	11	0	0	2-3	11	2	4+		Lv female x 1 Lh female x 1
31/05/2023			04:36		10	0					4+		Tc female x 1 Lv male x 2 Lv female x 2 Lh male x 7 Lh female x 5 Rt x 4 Bb x1
08/06/2023	02:50		04:29		8	0				4-5	4+		Tc female x1

KEY

- Turbidity Scale 0 = clear; 5 = very murky
- Vegetation Cover Scale 0 = none; 5 = obscured
- Temp Degrees Celsius
- Rain 0 = none; 1 = Drizzle/Mist; 2 = light showers; 3 = heavy rain
- Cloud Oktas e.g. 3/8
- Wind Beaufort Scale: 0 = Calm; 1 = Light Air; 2 = Light Breeze; 3 = Gentle Breeze; 4 = Moderate Breeze
- Species Tc (GCN Triturus cristatus); Lv (Smooth newt Lissotriton vulgaris); Lh (Palmate newt Lissotriton helveticus); Bb (Common toad Bufo bufo); Rt (Common frog Rana temporaria)

\*Torch surveys start at least 5 mins post sunset depending on cloud cover

## Appendix 7: Landscape Master Plan

Overleaf





edge Deciduous native mixed woodland, planted as heavy standards Native hedgerow to perimeter of development within the Site, managed at 2,5m high.

> New native hedgerow planting with hedgerow trees to perimeter of site

## Key Considerations:

Minimum of a 10m wide landscape belt around the periphery of the site. Combining new native tree planting and native hedgerow planting to the north and native hedgerow planting and species rich 'Tussock' grass to the south. Additional hedgerow planting within the site interior, to the perimeter of the development.

Proposed planting to comprise species of local provenance, with stock in accordance with seed zone 203 as described in Seed Sources for Planting Native Trees and Shrubs in Scotland (Forestry Commission Scotland 2006).

Existing vegetation to perimeter of Site to be protected and retained as far as practicable in accordance with BS 5837:2012. Opportunities for biodiversity net gain.

Emergency and maintenance access will be from the north east, off Barns Ness Terrace.





B 17/01/24 LB Revised layout - minor landscape amendments A 03/01/24 KCH Addition of native shrub mix and minor landscape amendments - 29/11/23 LB First draft Rev Date By Note

## KEY

Site boundary

EXISTING								
	Existing vegetation to be retained and protected							
$\bigcirc$	Existing vegetation to be removed							
	Stone wall to be retained							
	Stone wall to be removed							
— W -	Water pipe							
	Track beyond Site boundary							
PROPOSE	PROPOSED							
	Native hedgerow trees							
× ×	Tree planting. Deciduous native mixed							

	Native hedgerow trees
× .	Tree planting. Deciduous native mixed woodland, planted as Heavy Standards
V .//	Native mixed hedgerow, new sections and 'gapping up' of existing hedgelines
	Native shrub mix
	Mown grass. Seeded with Emorsgate EL1 Flowering Lawn or similar and approved
'n sls 'n sls 'n sls 'n	Tussock grass - seeded with Emorsgate EM10 Tussock Meadow Mixture, or similar approved.

Species rich grass, seeded with Emorsgate EG1 General Purpose Meadow Mixture or similar and approved. Access road

Easement

**Refer to Sheet 2 for Indicative Species List** 

# Landscape Masterplan

Braxbess Storage Sheet 1 of 2

Client: Braxbess Limited DRWG No: P23-0094\_EN\_0001\_S1 REV: B Approved by: KC Drawn by : LB Date: 29/11/2023 Scale: 1:1000 @ A0





## Key Considerations:

Minimum of a 10m wide landscape belt around the periphery of the site. Combining new native tree planting and native hedgerow planting to the north and native hedgerow planting and species rich 'Tussock' grass to the south. Additional hedgerow planting within the site interior, to the perimeter of the development. Proposed planting to comprise species of local provenance, with stock in accordance with seed zone 203 as described in Seed Sources for Planting Native Trees and Shrubs in Scotland (Forestry Commission Scotland 2006). Existing vegetation to perimeter of Site to be protected and retained as far as practicable in accordance with BS 5837:2012. Opportunities for biodiversity net gain.

Emergency and maintenance access will be from the north east, off Barns Ness Terrace.



200 m

150

## INDICATIVE PLANT SCHEDULE

## WOODLAND MIX Heavy standards. Planted on a staggered grid, min. 3m centres,

in species groups of 3 to 5.	
PLANT SPECIES	SIZE (GIRTH AND HEIGHT)
Acer campestre	RB 12-14 cm, 350-400 cm
Alnus glutinosa	RB 12-14 cm, 350-400 cm
Carinus betulus	RB 12-14 cm, 350-400 cm
Coryus avellana	B 80-100cm ht
Crateagus monogyna	B 80-100cm ht
Betula pendula	RB 12-14 cm, 350-400 cm
Betula pubescens	RB 12-14 cm, 350-400 cm
Fagus sylvatica	RB 12-14 cm, 350-400 cm
Malus sylvestris	RB 12-14 cm, 350-400 cm
Prunus avium	RB 12-14 cm, 350-400 cm
Quercus robur	RB 12-14 cm, 350-400 cm
Sorbus aria	RB 12-14 cm, 350-400 cm
Sorbus aucuparia	RB 12-14 cm, 350-400 cm

## HEDGEROW TREES

PLANT SPECIES	SIZE (GIRTH AND HEIGHT)
Acer campestre	RB 12-14 cm, 350-400 cm
Betula pendula	RB 12-14 cm, 350-400 cm
Fagus sylvatica	RB 12-14 cm, 350-400 cm
Malus sylvestris	RB 12-14 cm, 350-400 cm
Prunus avium	RB 12-14 cm, 350-400 cm
Quercus robur	RB 12-14 cm, 350-400 cm
Sorbus aucuparia	RB 12-14 cm, 350-400 cm

## NATIVE MIXED HEDGEROW

Planted 5 plants per linear m, double staggered row							
PLANT SPECIES	SIZE	%					
Coryus avellana	B 80-100 cm ht	20					
Crateagus monogyna	B 80-100 cm ht	30					
Ilex aquifolium	3L 40-60cm ht	10					
Prunus spinosa	B 80-100 cm ht	25					
Rosa canina	B 80-100 cm ht	5					
Sambucus nigra	B 80-100 cm ht	5					
Viburnum opulus	B 80–100 cm ht	5					





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Site boundary

EXISTING				
	Existing vegetation to be retained and protected			
$\left( \right)$	Existing vegetation to be removed			
	Stone wall to be retained			
	Stone wall to be removed			
— W -	Water pipe			
	Track beyond Site boundary			
PROPOSED				
	Native hedgerow trees			
<	Tree planting. Deciduous native mixed woodland, planted as Heavy Standards			
	Native mixed hedgerow, new sections and 'gapping up' of existing hedgelines			
	Native shrub mix			
	Mown grass. Seeded with Emorsgate EL1 Flowering Lawn or similar and approved			
da <sup>1</sup> 0 ala <sup>1</sup> 0 ala <sup>1</sup> 0 ala 1 <sub>0</sub> ala <sup>10</sup> ala <sup>1</sup> 0	Tussock grass - seeded with Emorsgate EM10 Tussock Meadow Mixture, or similar approved.			
	Species rich grass, seeded with Emorsgate EG1 General Purpose Meadow Mixture or similar and approved.			
	Access road			
ZZZ:	Easement			

# Landscape Masterplan

Braxbess Storage Sheet 2 of 2

Client: Braxbess Limited DRWG No: P23-0094\_EN\_0001\_S2 REV: B Drawn by : LB Approved by: KC Date: 29/11/2023 **PEGASUS** GROUP Scale: 1:1000 @ A0





P23-0094 BRANXBESS STORAGE

#### HABITAT MEASUREMENTS FOR BIODIVERSITY

Based on Landscape Masterplan Rev B 17/01/2024

RED LINE AREA	206,044	
ITEM	AREA (m2)	NOTE (areas within red line boundary only)
Deciduous woodland	13,946	
Native shrub mix	11,710	
Amenity/mown grass	8,354	
Tussock meadow grass	36,801	South of site
Species rich grass	16,304	Access route, easement through woodland & woodland periphery
TOTAL	87,115	
ITEM	Total No.	
No.of hedgerow trees	110	
ITEM	Length (m)	
Existing hedgerow removed	420	Based on Topo survey
Existing hedgerow retained	383	Based on Topo survey
New native hedgerow	3,618	