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Ecological Impact Assessment

Hagshaw LDES

April 2025

A report by

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Report details

Site name:	Hagshaw LDES
Site address:	Land at the M74 Heat and Power Park (now known as Conexus West), west of Junction 11 of the M74, Coalburn, Lanark, ML11 0RL
Grid reference:	NS 828 326
Report date:	30th April 2025
Report author:	Colin Hicks BSc (Hons), MCIEEM
Report reference:	WOR-5078.2

Declaration of compliance

BS 42020:2013

This study has been undertaken in accordance with British Standard 42020:2013 Biodiversity, Code of Practice for Planning and Development.

Code of Professional Conduct

The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

Validity of survey data and report

The findings of this report are valid for 24 months from the date of the supporting surveys.

Revisions

Date	Version no:	Comment
5.4.25	1.0	Initial version
30.4.25	2.0	Final version for planning

Table of contents

1. Introduction

1.1. Background

Western Ecology has been commissioned to complete an Ecological Impact Assessment in relation to the Hagshaw LDES project.

The development for which consent will be sought is the construction and operation of a Long Duration Electricity Storage ('LDES') system with a storage capacity of up to 6 Gigawatt hours (GWh). The Site is located on land at the M74 Heat and Power Park (now known as Conexus West), west of Junction 11 of the M74, Coalburn, Lanark, ML11 0RL.

1.2. Purpose of this report

A preliminary ecological appraisal was completed on 21st February 2025 by Colin Hicks BSc (hons) MCIEEM updated on 29th April 2025 by Yolande Knight PhD, MRSB and Michael Sander, BSc (hons).

This report presents the ecological information relating to valued ecological receptors obtained during these surveys and the desk-study, assesses the significance of the effects of the proposed development on these features, and sets out proposed mitigation measures.

This report also assesses the effect of changes in habitat management and additional plantings associated with the proposed development.

This report is intended to be used to inform consultees of the potential ecological impacts and proposed mitigation in relation to this development.

1.3. Site location

The Application Site is located southwest of junction 11 of the M74, approximately 1.5km south of Coalburn and approximately 1.5km north of Douglas.

The red line boundary extends to approximately 46 hectares but the developed area will be approximately 17 hectares of restored land which was part of the former Dalquhandy Opencast Coal Site. The area was not subject to coal extraction but principally used for coal stocking and associated coal dispatch operations (refer to Figures 4 and 5 in Appendix 1).

The Site now forms part of the Hagshaw Energy Cluster, an established strategic location for large scale renewable energy projects. The Site sits wholly within the South Lanarkshire Council administrative area ('the Planning Authority') and within the Douglas Community Council area, close to the boundary with Coalburn Community Council

2. Assessment methodology

2.1. Development site and Zone of Influence

The Assessment Site is shown on Map 1 and includes all areas within the planning application boundary and any immediately adjacent areas that may be affected by the proposed development.

The Zone of Influence for the purpose of this assessment are the site and adjacent areas that these proposals will potentially impact and designated sites within the local landscape. The existing access road coming in from junction 11 of the M74 is not included, as this is existing and already well-used.

The Zone of Influence for Statutory nature conservation sites is (Map 1):

- 2km for nationally important sites, and
- 5km for Internationally important sites.

This is informed by the nature of the development and the minimal predicted transboundary effects, which are likely to be limited to habitat loss to the operational area.

Zone of influence for terrestrial notable species is (Map 2):

- Badger – 100m[1]
- Pine marten - 250m[2]
- Red Squirrel – 50m[3]
- Otter – 200m[4]
- All other (including roosting bats) – 30m

2.2. Ecological baseline

The ecological baseline for the Assessment Site is the preliminary ecological appraisal and the desktop survey.

2.3. Site surveys

Preliminary Ecological Appraisal

A Preliminary Ecological Appraisal of the site was completed by Colin Hicks BSc (Hons), MCIEEM.

Survey visits completed on:

21st February 2025 between 09:00 and 1430 with an air temperature of 6°C, a fresh westerly wind, 100% cloud cover with periods of rain.

A second site visit was completed on 29th April 2025 by Yolande Knight PhD, MRSB and Michael Sander, BSc (hons) to provide additional information on protected

[1] https://www.nature.scot/doc/standing-advice-planning-consultations-badgers
[2] https://www.nature.scot/doc/standing-advice-planning-consultations-pine-martens
[3] https://www.nature.scot/doc/standing-advice-planning-consultations-red-squirrels
[4] https://www.nature.scot/doc/standing-advice-planning-consultations-otters

species that may not have been evident during the initial site visit. Weather was warm, sunny and dry,

The main plant species were recorded and broad habitat types mapped according to the UKhabs Classification definitions. Habitats encountered are described within the Results section, with a map included within the report. Plant species were identified according to Stace (1997).

During this survey, habitats within the Zone of Influence, where accessible, were assessed for their potential to support protected, notable, and invasive species, which could constrain the proposed development. This included:

Badger

A protected species walkover survey was completed within the proposed development site and a 100 metre buffer (Map 2). This was completed during daylight hours. All features resulting from Badger activity, including sett entrances, latrines, foraging scrapes and well-worn pathways, were accurately mapped using a handheld GPS receiver. Where necessary, digital images of features were collected, and all entrances were assessed as to their level of use and placed into the following categories:

- Active – Well-worn entrances with evidence of recent badger activity including paw prints, fresh bedding or excavations.
- Occasional use – Entrances open but with small amounts of live vegetation or leaves along tunnel base. Evidence of excavations in last few months with old bedding seeding in spoil heap.
- Abandoned - Partially collapsed entrance or completely filled with leaf litter. Spoil heap reduced by erosion with no pathway leading to the entrance. Includes badger sett entrances that have been adopted by rabbit or fox.
- Status unknown – Tunnels which have firm evidence of badger habitation at some time in the past (either tunnel shape or evidence of seeded bedding/badger hair in spoil) but now appear to be inhabited by rabbits or foxes.

Dependent on how entrances were clustered and their importance to the local Badger populations they were also classified as part of a:

- Main sett – A large cluster of entrances, continually occupied and used for breeding.
- Annex sett – A smaller cluster, usually occupied and close to the main sett and connected to it by well-worn pathways.
- Subsidiary sett - Seasonally occupied and some distance from the main sett.
- Outlier – small number of entrances, sometimes only one. Used sporadically and no obvious connection to main sett.

Pine marten

Open areas of wooded habitat (such as tracks and clearings) suitable for scat were searched. If scat was found, samples were collected for DNA analysis.

Red squirrel

During the site walkover the locations of potential dreys were noted along with any evidence of animals.

Otter

Field signs of Otter were searched for by an ecologist who meets the required competency level for Otter surveys in suitable habitats within 200m. This required an inspection of all reen banks and channel features within 30 metres of the proposed development. Spraint, footprints, slides, and possible holts and couches were looked for.

Roosting bats

All areas of the built features likely to be impacted by development were carefully examined internally and externally for signs of use by bats, with the aid of torches, by a suitable qualified and licenced ecologist. This included a search for bat droppings, feeding remains, urine stains and polished/scratched woodwork. A search was also made for individual bats, as well as potential access points and cavities capable of providing a roosting space for bats.

As part of the assessment, it is required that any buildings are valued for their suitability to support roosting bats, irrelevant of any signs of roosting. This is due to the highly cryptic nature of bats, in particular those species that roost in crevice habitat associated with roof coverings, fascia, soffit, bargeboards, flashing, feather boarding and stonework. Buildings are valued as follows:

- No suitability – No habitat features on site likely to be used by any roosting bats at any time of year (i.e. a complete absence of crevices / suitable shelter at all ground/underground levels).

- Negligible suitability - No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.

- Low suitability - A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and / or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats).

- Moderate suitability – A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type).

- High suitability - A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site

Trees were assessed for their potential for bats in line with based on BS8596:2015 *Surveying for bats in trees and woodland – Guide*:

Each tree has been assigned a Category

1. Known or confirmed roost.
2. High/medium risk - Trees with a suitable Potential Roosting Features (PRF), or with several features with some bat roost potential.
3. Low risk – Trees of sufficient size and age to contain bat roosts but with no obvious PRFs seen during the scoping survey, or features seen with limited roosting potential only, e.g. small amounts of ivy
4. Negligible/no risk - Trees with apparently no potential to support bats

The ecological assessment was provided by Colin Hicks, an ecologist with 26 years professional experience, a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and holder of a NatureScot survey licence in relation to bats (Licence no: 234434) which permits the surveying and handling of bats.

Desktop survey

The desktop survey collated existing biological records for the Assessment Site and adjacent areas, and identified any nature conservation sites that may be affected by the proposals. This comprises an important part of the assessment process, providing information on ecological issues that may not be apparent during the site survey.

Consultees for the data search included:

- Natural Scot - GIS dataset of statutory nature conservation sites and Ancient Woodland inventory.
- A record search was completed on NBN gateway for records available under Creative commons licence with attribution (CC-BY)[5] for great crested newt
- Due to the closure of the Glasgow Museum LERC, ecology surveys completed as part of the permissioned projects at this site were also used to inform this assessment. Where this information has been used, the relevant permission reference and report number are included.
- Review of ecological and ornithological survey data covering the Site provided in support of the extant planning permission for the development of 140,000 m^2 of industrial / commercial units up to a height of 15 m at the Site (M74 Heat & Power Park – SLC Refs. CL/17/0157 and P/20/0772).

[5] Data available under this licence can be used for any purpose, including commercial use.
This licence allows you to;

- Share – copy and redistribute the data in any medium or format
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- Review of ecological and ornithological survey data covering the Site provided in support of the extant planning permission for neighbouring wind farm whose baseline survey area covered the Site (Douglas West & Dalquahndy DP Renewable Energy Project – SLC Refs. CL/15/0273 and CL/17/0477).

Species data was examined for protected and notable species records. An assessment was then made, based on known habitat preferences, as to whether these species might be present within the site and how they might be affected by the proposal.
The location of nature conservation sites was examined to determine their ecological and landscape relationships with the proposed site. An assessment was then made of how the sites may be affected by the proposal, taking into account these relationships, and the species and/or habitat types for which the nature conservation site was chosen.

SSSI Impact Risk Zones are areas where the proposed planned change to the environment could either create significant damage to a local SSSI, or might require additional planning and consultation in order to avoid impacting such sites. The assessments are made according to the particular sensitivities of the features for which the SSSI is notified, and specifies the types of development that have the potential for adverse impacts.

In compliance with the terms and conditions relating to its commercial use, the full desk study data is not provided within this report.

2.4. Limitations

All areas of the Assessment Site were readily accessible during the preliminary ecological appraisal. However, it must be recognised that surveys only provide a snapshot of a site at a given time.

Although some plant species would not have been visible during the preliminary ecological appraisal period (late winter), habitat classification was possible, and this is not considered a significant constraint.

Operational buildings were not assessed for bat roosting potential.

2.5. Impact assessment method

The assessment of impacts has been carried out in accordance with the principles described by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018[6]).

The ecological feature or resource that is affected by an impact is referred to as the receptor. Impacts are considered in terms of the value of the receptor in the context of nature conservation, and the character of the impact. From these the significance of the impact is determined.

[6] CIEEM, 2018. *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Technical Guidance Series.* Chartered Institute of Ecology and Environmental Management, 43 Southgate Street, Winchester, Hampshire.

As part of the impact assessment, the available means to avoid, minimise or mitigate adverse impacts are incorporated into the design so that the final impact assessment identifies the residual (net) impacts that are predicted. The consequences for development control, policy guidance and legislative compliance can then be identified.

2.6. Method for valuation of receptors

The ecological value of habitats present is provided in line with Guidelines for Ecological Impact Assessment (CIEEM, 2018), and those which are important in terms of legislation or policy are identified.

The nature conservation value, or potential value, of the habitat is determined within the following geographic context:

- International importance (e.g. internationally designated sites such as Special Areas of Conservation, Special Protection Areas, Ramsar sites);
- National importance (e.g. nationally designated sites such as Sites of Special Scientific Interest or species populations of importance in the UK context);
- County importance (e.g. SNCI, habitats and species populations of importance in the context of Lanarkshire);
- Local importance (e.g. important ecological features such as old hedges, woodlands, ponds);
- Site importance (e.g. habitat mosaic of grassland and scrub which may support a diversity of common wildlife species);
- Negligible importance. Usually applied to areas such as built development or areas of intensive agricultural land.

The examples are not exclusive and are subject to further professional ecological judgment.

2.7. Impact Assessment Criteria

The assessment of potential impacts arising due to the development considers on-site impacts (i.e. within the footprint of the works) and those that may occur to adjacent and more distant ecological features.

Potential effects on valued receptors, adverse or positive, are identified for both the construction and operational phases. The effects are then assessed and characterised according to the following criteria:

- Direction (positive, adverse, or neutral)
- Magnitude of impact
- Spatial extent over which the impact would occur
- The temporal duration of the impact
- Permanence
- Frequency and timing
- Potential for cumulative effects.

The assessment identifies any information gaps and any uncertainties that may be material in the confidence of predicting effects. Confidence in predictions is given as:

- Certain/near-Certain: probability estimated at 95% chance or higher.
- Probable: probability estimated above 50% but below 95%.
- Unlikely: probability estimated above 5% but less than 50%.
- Extremely Unlikely: probability estimated at less than 5%.

The precautionary principle is applied whenever there is substantial doubt. The impact timescale is given as:

- Acute, immediate, and discrete;
- Short-term: 0-3 years;
- Medium term 3-10 years; and
- Long term: 10 years +.

Effects include, but are not restricted to:

- loss or change of habitat;
- disturbance during construction, operation, and decommissioning;
- chemical effects form airborne pollutants
- contravention of legal status or protection (including where the receptor would not meet or exceed the value threshold).

Ecologically significance has been assessed in line with '*Guidelines for Ecological Impact Assessment in the UK and Ireland*[7]' that states:

> "Significance is a concept related to the weight that should be attached to effects when decisions are made. For the purpose of EcIA, 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local.
>
> **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**. A significant effect is a positive or negative ecological effect that should be given weight in judging whether to authorise a project: it can influence whether permission is given or refused and, if given, whether the effect is important enough to warrant conditions, restrictions or further requirements such as monitoring. 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 negative ecological effects have been lawfully permitted following EIA procedures.

[7] https://cieem.net/wp-content/uploads/2018/08/ECIA-Guidelines-2018-Terrestrial-Freshwater-Coastal-and-Marine-V1.2-April-22-Compressed.pdf

European Protected Sites– definition of significance of effect

For a European Protected Site the integrity of a site is:

> 'the coherence of the ecological structure and function across its whole area that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified.'

Disturbance should not have a significant effect on the integrity of a European Protected Site.

2.8. Mitigation

Where there is potential that the proposed development will have a significant effect on a valued ecological feature of nature conservation interest, recommendations for mitigation are made based on the mitigation hierarchy;

- Avoidance –significant harm to wildlife species and habitats should be avoided through design.
- Mitigation – where significant harm cannot be wholly or partially avoided, it should be minimised by design, or by the use of effective mitigation measures that can be secured by, for example, conditions or planning obligations.
- Compensation – where, despite whatever mitigation would be effective, there would still be significant residual harm, as a last resort, this should be properly compensated for by measures to provide for an equivalent value of biodiversity.

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Legend

- Coalburn Moss Special Area of Conservation
- Redline
- 2km - National sites
- 5km - European Sites

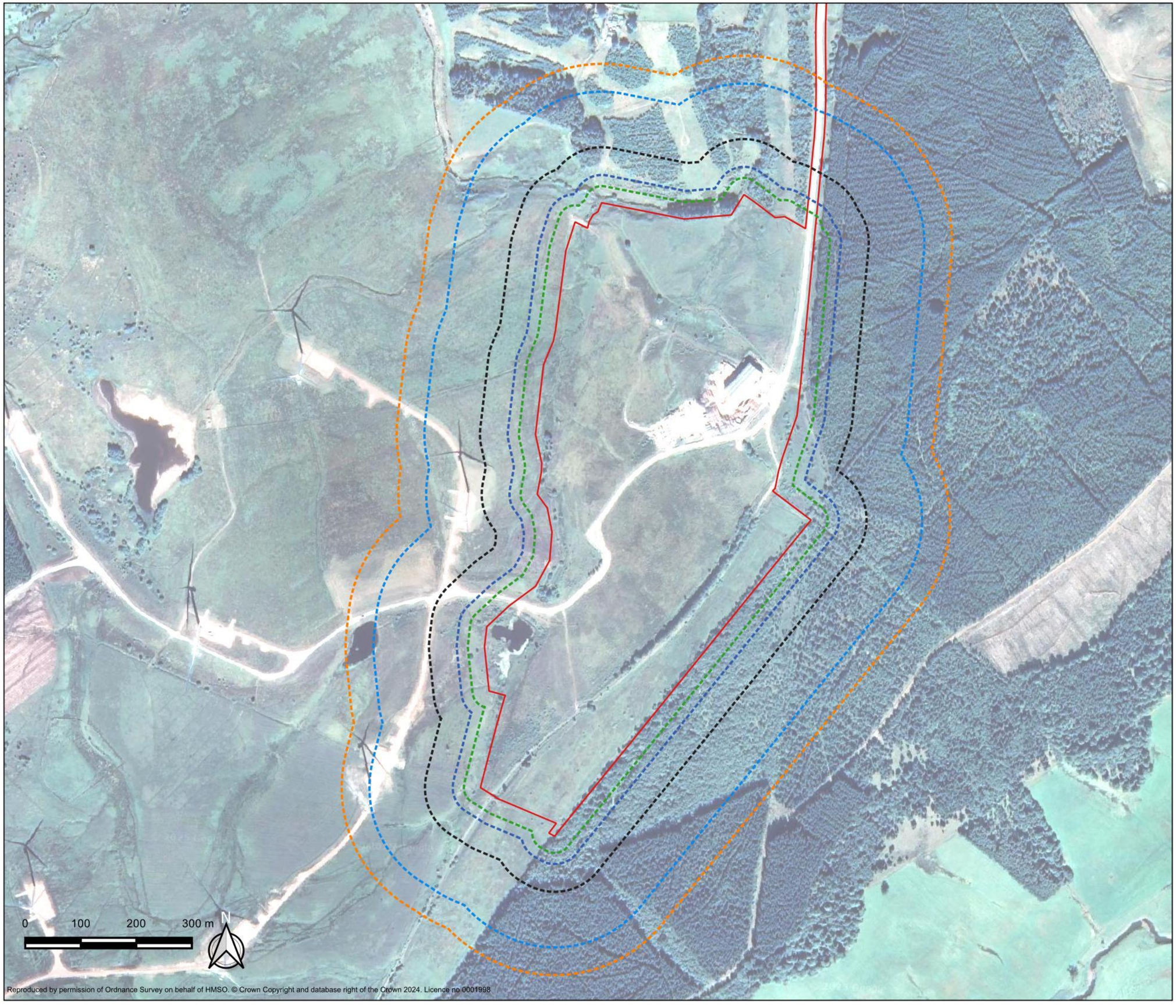
0 1 2 km

N

Title: Map 1. Zone of Influence considered for Statutory nature conservation sites

Project: Hagshaw LDES

Checked by: CDH Version: 01
Date: 24.4.25



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Legend

- Redline
- All species (30m)
- Red Sqirrel (50m)
- Badger (100m)
- Otter (200m)
- Pine marten (250m)

Title: Map 2. Zone of influence considered for protected and notable species.

Project: Hagshaw LDES

Checked by: CDH Version: 01
Date: 25.04.2025

3. Legislation and Policy used to assess ecological receptors

3.1. Planning policy

The Proposed Development will be determined against National Planning Framework 4 (NPF4). The policies of relevance include:

> **Policy 3 Biodiversity**: To protect biodiversity, reverse biodiversity loss, deliver positive effects from development and strengthen nature networks.
> **Policy 4 Natural Places**: To protect, restore and enhance natural assets making best use of nature-based solutions.

3.2. Nature Conservation Legislation

European Habitats and Species Directive (CEC, 1992)
The main aim of the Habitats Directive is to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore natural habitats and wild species listed on the Annexes to the Directive at a favourable conservation status, introducing robust protection for those habitats and species of European importance.

The Wildlife and Countryside Act (WCA) 1981 (as amended)
This Act is the primary legislation that protects animals, plants and certain habitats in the UK. This includes the designation and protection of some of the best areas of natural environmental as Sites of Special Scientific Interest (SSSI).

The Conservation of Habitats and Species Regulations 2017
The Conservation of Habitats and Species Regulations 2017 consolidate all the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994 in respect of England and Wales. The 1994 Regulations transposed Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law.

The Regulations place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species. These sites form a network termed Natura 2000 and include Special Areas of Conservation (SAC) and Special Protection Areas (SPA).

Nature Conservation (Scotland) Act 2004
Under this Act, all public bodies in Scotland have a duty to further the conservation of biodiversity when carrying out their responsibilities. This biodiversity duty is about taking care of nature all around us, not just in specific protected sites and for particular species.

Protection of Badgers Act 1992 (as amended)
The Protection of Badgers Act 1992 (amended in Scotland by Wildlife and Natural Environment (Scotland) Act 2011) consolidated and improved previous legislation. Under the Act it is an offence to kill, injure or take a Badger, or to damage or interfere with a sett used by a Badger unless a licence is obtained from a statutory authority.

3.3. Biodiversity strategies

Scottish Biodiversity Strategy

The original strategy – Scotland's Biodiversity: It's in Your Hands – was published in 2004. In 2013, it was supplemented by the 2020 Challenge for Scotland's Biodiversity. The two documents together constituted the Scottish Biodiversity Strategy

Scottish Biodiversity List

The Scottish Biodiversity List is a list of animals, plants and habitats that Scottish Ministers consider to be of principal importance for biodiversity conservation in Scotland.

County Level

The South Lanarkshire Biodiversity Strategy (2024 - 2030) has applied the principles of the UK Priority Habitat and Species Plan at County level and published lists of Priority Species and Habitats for the area. The listed species and habitats will be the targets of conservation actions.

4. Ecological baseline

4.1. Desktop Study

Currently, there is no active LERC covering this area.

Statutory nature conservation sites

The Assessment Site does not lie within or immediately adjacent to a statutory designated nature conservation site (SNCS).

There are no SSSIs located within 2km of the main development site (Map 1).

Coalburn Moss Special Area of Conservation (SAC)

This SAC is located 2.5km to the north of the Assessment Site. This was selected for:

Annex I habitats that are a primary reason for selection of this site

- **7110** Active raised bogs

  Coalburn Moss retains an extensive primary dome, although this is now confined by two abandoned railway lines. The site contains one of the larger tracts of vigorous bog-moss-dominated vegetation in the Central Belt of Scotland, with distinctive wet *Sphagnum* hollows. Typical bog-mosses include *Sphagnum papillosum* and *S. magellanicum*. Hare's-tail cottongrass *Eriophorum vaginatum*, cranberry *Vaccinium oxycoccos* and reindeer-moss lichen *Cladonia* spp. are also common. The hollows, rich in *S. cuspidatum*, are occasionally fringed by great sundew *Drosera anglica*. Some of the margins of the site also support wetland communities.

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site

- **7120** Degraded raised bogs still capable of natural regeneration

Annex II species that are a primary reason for selection of this site

- Not Applicable

Annex II species present as a qualifying feature, but not a primary reason for site selection

- Not Applicable

Receptor assessment: Coalburn Moss SAC is of International value. However, this SAC can be screened out of further assessment due to the negligible transboundary effects of the proposed LDES and the habitat types for which this SAC has been selected and a lack of hydrological connectivity between the Assessment Site and this SAC

Non-statutory nature conservation sites (NNCS)

Long Plantation Ancient Woodland

Woodland along the south eastern site boundary is part of Long Planation, an area of woodland included in the Ancient Woodland Inventory.

Records of notable species

Previous studies of the Assessment Site have been used to provide information on protected species distribution.

Table 1. Ornithology survey information for the Assessment Site

Survey	Species	Total number	Comments	Additional comments
2014-2015 Flight Activity Survey (non-breeding season)	Barn owl	1		
2014-2015 Flight Activity Survey (non-breeding season)	Barnacle goose	1		
2014-2015 Flight Activity Survey (non-breeding season)	Curlew	7		
2014-2015 Flight Activity Survey (non-breeding season)	Golden plover	2		
2014-2015 Flight Activity Survey (non-breeding season)	Greylag goose	33		
2014-2015 Flight Activity Survey (non-breeding season)	Hen harrier	45		
2014-2015 Flight Activity Survey (non-breeding season)	Lapwing	1		
2014-2015 Flight Activity Survey (non-breeding season)	Merlin	1		
2014-2015 Flight Activity Survey (non-breeding season)	Oystercatcher	1		
2014-2015 Flight Activity Survey (non-breeding season)	Pink-footed goose	28		
2014-2015 Flight Activity Survey (non-breeding season)	Snipe	5		
2014-2015 Flight Activity Survey (non-breeding season)	Whooper swan	7		
April and May 2015 Flight Activity Survey (early breeding season)	Common sandpiper	1		
April and May 2015 Flight Activity Survey (early breeding season)	Curlew	19		
April and May 2015 Flight Activity Survey (early breeding season)	Greylag goose	14		
April and May 2015 Flight Activity Survey (early breeding season)	Lapwing	3		
April and May 2015 Flight Activity Survey (early breeding season)	Oystercatcher	1		
April and May 2015 Flight Activity Survey (early breeding season)	Peregrine	1		
April and May 2015 Flight Activity Survey (early breeding season)	Pink-footed goose	5		
April and May 2015 Flight Activity Survey (early breeding season)	Snipe	6		

Black Grouse Survey 2015	Black Grouse	2	1 Female flushed within site	1 male recorded in 500m buffer zone
Scarce Breeding Bird Surveys	Hen harrier	2	Foraging/flying (non breeding)	in 2km buffer zone
Scarce Breeding Bird Surveys	Peregrine	1	Foraging/flying (non breeding)	in 2km buffer zone
Scarce Breeding Bird Surveys	Goshawk	1	Foraging/flying (non breeding)	in 2km buffer zone
Scarce Breeding Bird Surveys	Merlin	1	Foraging/flying (non breeding)	in 2km buffer zone
Barn Owl Survey	Barn owl		Feeding signs	near 1km buffer zone
April and May 2015 Moorland Bird Survey	Curlew		5 territories	2 within site, 3 within 500m buffer zone
April and May 2015 Moorland Bird Survey	Lapwing		7 territories	2 within site, 5 within 500m buffer zone
April and May 2015 Moorland Bird Survey	Common Sandpiper		5 territories	2 within site, 3 within 500m buffer zone
April and May 2015 Moorland Bird Survey	Snipe		13 territories	7 within site, 6 within 500m buffer zone
April and May 2015 Moorland Bird Survey	Redshank		4 territories	1 within site, 3 within 500m buffer zone
April and May 2015 Moorland Bird Survey	Oystercatcher		3 territories	0 within site, 3 within 500m buffer zone
April and May 2015 Moorland Bird Survey	Ringed plover		1 territory	0 within site, 2 within 500m buffer zone

Badgers

Badgers were confirmed present in the surrounding areas of the Site during surveys for the Douglas West & Dalquhandy DP Renewable Energy Project (Appendix 1), with field signs present along Poniel Water. No setts were found within the Study Area for M74 Heat and Power Park during previous surveys informing the Douglas West & Dalquhandy DP Renewable Energy Project.

Otter

Otters were confirmed to be using the wider area of the Site during previous surveys undertaken for the Douglas West & Dalquhandy DP Renewable Energy Project in 2014/15. No signs of otter were previously recorded within the Study Area for this Site.

Red Squirrel

As noted in the Douglas West & Dalquhandy DP Renewable Energy Project ES, historical surveys of local area (as cited in Dunnock Environmental Services, 2009) revealed very low levels of red squirrel activity within Townhead Wood (outwith the site, 1.8 km to the east) and Long Plantation (outside but adjacent to the site on the east) with the most recent record dating from 2007. However, all the surveys recorded higher levels of grey squirrels in the area and the 2009 survey of Townhead Wood did not record any red squirrel evidence. Dunnock Environmental Services observed a grey squirrel during the 2014 surveys of the site. Red squirrels were therefore scoped out of the ES for the Douglas West & Dalquhandy DP Renewable Energy Project.

Pine marten

Pine marten were scoped out of assessment for the Douglas West & Dalquhandy DP Renewable Energy Project, therefore, no previous surveys for pine marten were undertaken.

Bats

Bat roost surveys were previously undertaken in 2014 and 2015 for the Douglas West & Dalquhandy DP Renewable Energy Project. Two stone railway bridges were found and inspected using endoscopes during these surveys. No signs of use by bats were found during the endoscopy surveys in 2015.

The same two railway bridges were found during field surveys within the Study Area for this Site. The bridge to the south at NS 82631 32103 was found to have low roosting potential, the bridge further north at NS 83083 32593 was assessed as being unlikely to be used by bats.

Habitat suitable for bats is limited to the eastern edge of the Study Area, along the plantation forestry and some scattered trees in this area.

Other species

No other species were observed during field surveys. Great-crested newts were scoped out of the surveys for Douglas West & Dalquhandy DP Renewable Energy Project due to no suitable habitat

Great crested newt

There are no freely available records on the NBN Gateway of great crested newts within 32km of the Assessment Site, whilst they were scoped out of consideration in previous assessments.

4.2. The need for an appropriate assessment

An appropriate assessment is required by Regulation 48 of the Habitats Regulations 1994 implementing Article 6(3) of the Habitats Directive (92/43/EEC) in the event that it is considered a plan or project, not connected with the management of that site, is likely to have a 'significant effect' on any European (Natura) site, i.e. Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites.

The purpose of appropriate assessment is to ensure that protection of the integrity of European sites is a part of the planning process at a regional and local level. Permission can only be granted if it can be ascertained that the plan or project will not affect the integrity of the European site.

No impacts are predicted on European Sites and an HRA is not required.

4.3. Habitats

A habitats and protected species walkover survey was carried out in February 2025 and updated in April 2025, to confirm if there had been any notable changes in habitats and species present on Site since previous surveys were carried out for the extant planning permission (Ref. CL/17/0157) for industrial units on the Site and for the Douglas West & Dalquhandy DP Renewable Energy Project (Ref. CL/17/0477) where habitat and protected species surveys also covered the Site.

The main habitats on Site were classified using the UKhabs methodology, and are described below and detailed in Table 2 and Map 3. Habitats which are important in terms of legislation or policy are identified. Plant species that characterise each of these habitats are identified, although this is for descriptive purposes only, and a comprehensive inventory is not provided.

For more detailed habitat information for the Site please refer to Appendix 1 for previous survey reports. The site walkovers undertaken in 2025 confirmed no notable changes in habitats on Site since the previous site surveys in 2015 and 2017 with the exception of a new area of hardstanding to the south of the access road as shown on Map 3.

Table 2. Habitats summary in 2025

Habitat code	Habitat name	Description	Biodiversity value
Primary code: g1d	Other lowland acid grassland	Much of the Assessment Site comprises undulating grassland, wet in places, with areas of abundant soft rush *Juncus effusus* among grassland dominated by Wavy hairgrass *Avenella flexuosa*. Associated with these areas were locally abundant Yorkshire fog *Holcus lanatus*, marsh thistle	Site

Secondary codes: 10, 13		*Cirsium palustre*, bristle bent *Agrostis curtisii*, common sorrel *Rumex acetosa*, creeping buttercup *Ranunculus repens*, heath wood-rush *Luzula multiflora* and creeping thistle *Cirsium arvense*. (10) Scattered, small willow *Salix* spp, alder *Alnus glutinosa* and birch *Betula* sp. were present within grassland along with scattered European gorse *Ulex europaeus* (13) Small areas of lowland heath were present on dry stony ground characterised by ling *Calluna vulgaris,* bristle bent and immature gorse *Ulex europaeus.* Areas of habitat indicative of Ground Water Dependent Terrestrial Ecosystems GWDTE) were present. However, these were fully assessed as part of a previous application at this site in "*M74 Heat and Power Park, National Vegetation Classification Survey and GWDTE Appraisal"* (CL/17/0157 – Appendix 1) where it was concluded: *"It is clear from the vegetation communities described for this study area and discussed in the various sections above that the habitats have been heavily influenced by anthropogenic interaction, from the former use as an opencast coal mine and current grazing livestock. Although some large relatively homogenous stands of vegetation occur across the study area most of the communities described above often form complex mosaics and transitional areas across the study area and are maintained by the current management regime. The survey results indicated the presence of potential GWDTE habitats, as summarised in Table 6-1 above. These habitats have been further assessed based on the underlying hydrogeology and historic land use[8], and, are not assessed as being truly groundwater dependent in this setting."* Please refer to Figures 3 and 4 of the M74 Heat and Power Park, National Vegetation Classification Survey and GWDTE Appraisal (Appendix 1), which show the extent to which the site was previously disturbed by opencast coal operations.	
Primary code: w1f7	Other Lowland mixed deciduous woodland	An area of open, immature scrubby woodland is present along a narrow, raised bank dominated by immature birch *Betula* sp, with occasional bramble, alder and willow. At the time of the February 2025 survey, ground flora was limited to grasses, including Yorkshire fog and cock's fog *Dactylis glomerata*, willowherb *Epilobium* sp. common nettle *Urica dioica* and bramble *Rubus fruticosus* agg. By April 2025 floral diversity has increased to include common dog violet *Viola riviniana*, colt's-foot *Tussilago farfara*, bracken *Pteridium aquilinum* and ribwort plantain *Plantago lanceolata*.	Local This immature and scrubby habitat would qualify as a priority habitat

[8] For historic land-use of the Assessment Site please refer to Figures 3 & 4 of appendix 1 that indicate the extent to which the site was previously disturbed by opencast coal operations.

Code: 510	Bare ground	Bare ground was present along the margins of access tracks where vegetation had been cleared.	Negligible
Primary code: r2b	Other rivers and streams	Small watercourses in steep-sided channels drain the site with banks dominated by grasses and scattered scrub. A small area of bullrush *Typha latifolia* was present in the north of the Assessment Site.	Site
Primary code: r1g	Other standing water	A pond is present in the west of the Assessment Site fringed by European gorse, willow and willowherb.	Site
Primary code: u1b & u1c	Developed land-sealed surface & Artificial unvegetated unsealed surface	Site compounds, roads and existing developments are present within the redline.	Negligible

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Legend

UKhabs habitats

- Lowland acid grassland
- Other lowland mixed deciduous woodland
- Developed land. sealed surface
- Artificial unvegetated unsealed surface
- Bare ground
- Pond
- Small watercourses

Protected species survey areas

- All species
- Red Sqirrel
- Badger
- Otter
- Pine marten

Protected species survey results

- Badger foraging scrape
- Bridge with negligible bat roost potential
- Badger footprint
- Otter spraint on rocks beside Poniel Water
- Squirrel drey

- Redline

0 100 200 m

N

Title: Map 3. UKhabs and protected species walkover survey 2025

Project: Hagshaw LDES

Checked by: CDH Version: 04
Date: 30.4.25

4.4. Species of nature conservation importance

Habitats have been assessed from the results of the desktop and field survey in 205 and from a review of the previous surveys at site for their potential to support the following protected species. Where there is no potential for a species or species group to be present within the Assessment Site, or where habitats with the potential to support this species or species group will not be impacted by the proposals, they may be scoped out at this stage.

Table 3. Potential for species of nature conservation importance

Species group	**Assessment**	Likely value of the Site for species group
Amphibians	Common amphibians, such as common toads and frogs, are likely to be present. However, there are no records for great crested newts within 32km. GCN eDNA and population studies were completed in 2015 and this included the pond within the Assessment Site (CL/15/0273). No GCN were recorded and they were scoped out in assessment in 2015 and 2017. Semi-natural habitats, such as grassland, scrub, and woodland, may provide some foraging, sheltering, and dispersing opportunities for common amphibian species.	Common and widespread Amphibians – Site Great crested newt - Negligible
Badgers	Occasional foraging evidence was recorded in April 2025 along with a pawprint (Map 3), although habitats are suboptimal. Badger foraging activity was also recorded here during previous surveys, and it is likely that they are occasionally active here.	Site
Bats: roosting	Individual trees within the woodland are immature and would not provide a suitable habitat for roosting bats. All trees within the Assessment Site are of negligible value for days roosting bats. A culvert under an elevated wooded bank in the east of the site (NS 83083 32593) was judged to be unlikely to be used by bats in 2015, and this assessment remains unchanged. The railway bridge at the south-western limit of the site (NS 82631 32103) was assessed as having Low potential in 2015, and is currently assessed as having Negligible potential during February and April 2025.	Negligible
Bats: foraging	The habitats within the assessment would provide potential for foraging bats of open spaces, such as pipistrelle and noctule species, but lacks linear features suitable for less common species such as myotis. Bat activity surveys were completed in 2015 for the adjacent windfarm (CL/15/0273) and determined that bat activity index was low with common pipistrelle, soprano pipistrelle, brown long-eared, myotis and Nyctalus bats recorded.	Site
Breeding birds	It is likely that common and widespread bird species nest in wooded habitats and tussocky grassland. Moorland breeding bird surveys completed as part of the adjacent wind farm in 2015 (CL/17/0477) identified two snipe, a curlew and a common sandpiper in the site; the latter was associated with the pond. Snipe and common sandpiper are Amber listed, and Curlew is Red listed.	Local

Wintering birds	The Assessment Site is undulating with built structures and access roads and is unlikely to be important for wintering birds.	Site
Red squirrel	Although squirrel dreys were recorded in two locations in 2016 during surveys for the M74 Heat and Power project (see Map 3 in this report and, M74 Heat and Power Park Preliminary Ecological Appraisal (PEA) - Protected Species including Bats CONFIDENTIAL Figure 1, Appendix 1), it was not determined if the dreys were due to red or grey squirrels. Only a single drey was recorded here in 2025, along the margins of Long Plantation, away from the developed area with no dreys associated with the strip of woodland for removal. The majority of open grassland habitats on-site would not be regularly used by red squirrels, which avoid open landscapes and are largely associated with woodland. The small strip of woodland within the Assessment Site would not support this animal on a regular basis, and a lack of arboreal connectivity between Long Plantation and this area makes it unlikely to be used by them. This species was scoped out of the previous was scoped out of the previous application at this site, and is unlikely to be present, whilst it is generally accepted that grey squirrels are dominant within this landscape[9]. Red Squirrel does not need to be considered further.	Negligible
Pine marten	Although pine martens are more common in areas further north, there are known populations in this part of Scotland. No evidence of pine marten presence was found during the February and April 2025 surveys. The majority of open grassland habitats on-site would not be regularly used by pine martens, which avoid open landscapes and are typically associated with significant blocks of mature woodland or open hillsides. Disturbance associated with the ongoing construction and operational activities here makes it extremely unlikely that a pine marten would be active in the vicinity of the Assessment Site, and the small strip of woodland within the Assessment Site would not support this animal, lacking suitable resting places. Pine marten was scoped out of the previous application at this site, and is unlikely to be present. This species is unlikely to be present and does not need to be considered further	Negligible
Reptiles	It is possible that small numbers of common and widespread reptiles, such as slow worm, common lizard, grass snakes and adder, are present.	Site
Otter	Although otter spraints was recorded in two locations along Poniel Water in 2016 during surveys for the M74 Heat and Power project (see Map 3 in this report and, M74 Heat and Power Park Preliminary Ecological Appraisal (PEA) - Protected Species including Bats CONFIDENTIAL Figure 1, Appendix 1), and a single otter spraint found along Poniel Water during the April 2025 survey, no evidence of otter was found within the redline boundary (Map 3). The small watercourses within the proposed development site are unlikely to be an important foraging habitat for otter, although they could occasionally be active here, feeding on amphibians.	Site
Water Vole	The stream habitat does not constitute a suitable habitat with no evidence being recorded in previous surveys of the Assessment Site. This species is unlikely to be present and does not need to be considered further.	Negligible

[9] https://www.rsst.org.uk/where-to-find-red-squirrels/

Fish	The small watercourse (Alder Burn) flowing away to the north east was judged unsuitable for fish during surveys in 2012 due to a lack of water, downstream culvert, and instream / bankside cover for fish (no trees lined along the watercourse). No fish species were recorded during the electrofishing survey (CL/17/0477). This watercourse does not appear to have changed since that time and is unlikely to be important for fish.	Negligible
Notable invertebrates	Habitats at this site are likely to support common and widespread invertebrates with very little potential for notable species.	Negligible
Notable plants	There is very limited potential for notable plant species and this receptor does not need to be considered further.	Negligible
Invasive non-native plants	No plant listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) as invasive non-native with respect to Scotland was present.	Absent

4.5. Evaluation of ecological receptors

The ecological receptors to be considered for the potential of significant effects are given in Table 4. These are of local or higher value; those ecological receptors that have less than local value are not considered further unless they are European Protected Species and there is potential for them to be present (in which case the regulatory context i.e. the Habitats Regulations 2010 is considered), or they are the subject of national legislation (i.e. Wildlife and Countryside Act 1981).

Table 4. Table of ecological receptors to be considered for potential of significant effects

Receptor	**Relevant legislation/policy**	**Value**
Long Plantation Ancient Woodland	Wildlife and Countryside Act 1981 (as amended)	Local
Other Lowland mixed deciduous woodland	Priority habitat	Local
Amphibians (common and widespread)	Wildlife and Countryside Act 1981, Priority species	Site
Bats (foraging)	European Protected Species, Priority species	Site
Breeding birds	Wildlife and Countryside Act 1981, Priority species	Site
Reptiles	Wildlife and Countryside Act 1981, Priority species	Site
Otter	European Protected Species, Priority species	Site
Badger	Protection of Badgers Act 1992 (as amended)	**Site**

5. Assessment of ecological impacts

5.1. The proposed development

The development for which consent will be sought is the construction and operation of a Long Duration Electricity Storage ('LDES') system with a storage capacity of up to 6 Gigawatt hours (GWh). The Site is located on land at the M74 Heat and Power Park (now known as Conexus West), west of Junction 11 of the M74, Coalburn, Lanark, ML11 0RL.

5.2. Construction phase impacts

During the construction phase, there are predictable adverse effects which are generally unavoidable; many are short term and can be minimised as part of the construction management, but some have the potential for more lasting effect if not properly mitigated

The potential for adverse effects area largely short term impacts associated with noise and vibration, airborne and waterborne, pollutants, short term habitat loss or disturbance. The potential for adverse effects would be minimised as far as possible through the application of good practice techniques and adherence to well-designed method statements; these would be managed through a Construction Environmental Management Plan (CEMP).

Non-statutory nature conservation sites

Long Plantation Ancient Woodland is present along the south eastern boundary of the Assessment Site.

Due to the separation distance between this receptor and the developed area, the construction phase would not lead to any direct habitat loss within this woodland nor impacts to the root protection area of trees, whilst overhead power lines create a separating buffer between the developable areas and this receptor. The primary pathway of effect would be associated with the accidental release of pollutants.

Assessment: It is unlikely that unmitigated construction would have an adverse effect on this receptor. If any effect were to occur, it would be associated with pollution. This would likely be minor, adverse and short-term.

Valued habitats of the Assessment Site

Other lowland broadleaved woodland

This habitat comprise scrubby woodland along the dissed railway line in the south of the Assessment Site.

The primary pathway of effect would be accidental damage due to vehicle movements, pollution and material storage, or damage during development.

An effect could also be associated with impacts to the root protection area of trees within adjacent woodland.

Assessment: It is unlikely that unmitigated construction would have an adverse effect on this receptor. Any effect were it to occur would be associated with construction within the root

protection zones of trees, or accidental damage. An effect would be adverse, minor and short term. However, this habitat will be lost to the development and any impacts during the construction phase are irrelevant to this assessment and are not considered further.

Permanent loss of this scrubby woodland is considered as an operational phase impact, with appropriate mitigation measures adopted.

Protected and notable species

Amphibians (common and widespread)

The Assessment Site is of Site value for common and widespread amphibians with the potential for them to be present. The primary pathway of effect would be direct harm during the construction phase resulting from works in damp areas, although amphibians would likely relocate.

Assessment: It is probable that unmitigated construction would have an adverse effect on individual amphibians were they to be present. If any effect were to occur, it would be minor and short-term.

Intentional killing or injuring amphibians would be considered an offence under relevant wildlife legislation.

Badgers

The Assessment Site is of Site value for Badgers with no active setts recorded. The primary pathway of effect would be through impacts to foraging habitats and animals becoming trapped within the construction site.

Assessment: Unmitigated construction is near-certain to have an adverse effect on Badgers. The effect would be short term, minor adverse.

Bats (foraging)

The Assessment Site is of Site value for foraging and commuting bats. The primary pathway of effect would be through impacts to habitat features used by foraging bats, such as direct habitat loss and damage. There will be a short-term loss in grassland habitat associated with construction due to storage areas/compounds, although these habitats are of limited value for bats.

No night-time works are planned during the construction phase. Short term disturbance to grassland habitats is unlikely to affect local bat populations whilst there will be no loss of the adjoining Long Plantation woodland, which is considered to be the main habitat of interest to bats at the Site.
Assessment: The construction phase is near certain to have a negligible effect on foraging and commuting bats.

Birds

The Assessment Site is Site value for common and widespread nesting birds associated with wooded habitats and occasional moorland nesting species, including meadow pipit,

snipe and curlew that were recorded here in previous wind farm surveys (CL/17/0477). It should be noted that curlew and common sandpiper were recorded inside the redline, but outside the current development area.
The primary pathway of effect would be through accidental damage to nests and harm to chicks, and temporary habitat loss to construction compounds.

Assessment: There is potential that construction would have an effect on nesting birds. Any effect would be minor, temporary adverse and associated with accidental damage or disturbance to nests.

There is potential to impact birds in a way that could be considered an offence under relevant wildlife legislation.

Reptiles

The Assessment Site is of Site value for common and widespread reptiles with the potential for them to present in grassland habitats. The primary pathway of effect would be direct harm during the construction phase resulting from works in areas of grassland, although reptiles would likely relocate. The temporary loss of habitat associated with construction would not affect foraging reptiles, or reptile populations, due to the extent of this habitat that will remain unaffected.

Grassland has sufficient structure for hibernating reptiles, along with adjacent scrubby and wooded margins.

Assessment: It is unlikely that construction would have an adverse effect on individual reptiles were they to be present. Any effect was it to occur would be minor and short term.

Intentional killing for injuring of reptiles would be considered an offence under relevant wildlife legislation.

Otter

The Assessment Site is of Site value for Otter. The primary pathway of effect would be through impacts to watercourses and adjacent habitats. There is also the potential for direct harm or injury.

Assessment: It is unlikely that unmitigated construction would have an adverse effect on Otter. If any effect were to occur, it would be minor, short-term adverse.

Disturbance, harm or injury to Otter or damage of resting or breeding place could be considered an offence under relevant wildlife legislation.

5.3. Operational phase impacts

Overview

During the operational phase, effects may arise from the following activities:

- Maintenance;
- changes in land-management: these can be positive, associated with changes in agricultural practices.

- loss of habitat, habitat fragmentation and disturbance to valued receptors.
- additional habitat creation.

Non-statutory nature conservation sites

Adverse effects can be discounted for Long Plantation Ancient Woodland due to the separation distance to the development footprint, resulting in no realistic pathway of effect on this feature during the operational phase.

Valued habitats of the Assessment Site

Other lowland broadleaved woodland

Approximately 0.68ha of scrubby woodland will be lost. However, proposals for the site include the creation of 3.35ha of additional woodland managed for the benefit of biodiversity.

Assessment: The operational phase would result in a long-term net gain for woodland habitat.

Protected and notable species

Amphibians

No ponds likely to be used for breeding by common and widespread amphibians will be lost to the proposed development. Although potential foraging habitat will be lost, this is unlikely to impact local populations.

Assessment: The unmitigated operational phase is near-certain to have no effect on amphibian populations.

Badgers

The Assessment Site is of Site value for Badgers. The primary pathway of effect would be through impacts to foraging habitats and becoming trapped within the operation development.

Assessment: The unmitigated operational phase is near-certain no effect on Badgers.

Bats (foraging)

The Assessment Site is of Site value for foraging bats.

The primary pathway of effect would be through impacts to habitat features used by foraging bats, such as direct habitat loss or changes in management.

Although there will be a loss of 0.68ha of woodland habitat and 18.8ha of grassland habitat, proposals for the site include the creation of 3.35ha of additional woodland habitat, a 0.37ha attenuation pond and enhancement of 19.7ha of retained grassland beyond the developed area. Boundary habitats likely to be important for foraging bats, such as wooded areas to the north and Long Plantation to the southeast, will not be impacted by the proposed development and will preserve their value.

Assessment: It is near-certain that operational phase would have no adverse effect on bats.

Birds

The Assessment Site is of Site value for nesting birds associated with woody boundaries and moorland habitat. Although there will be a loss of 0.68ha of woodland habitat and 18.8ha of grassland habitat, the proposal for the site includes the creation of 3.35ha of additional woodland habitat, a 0.37ha attenuation pond and enhancement of 19.7ha of retained grassland beyond the developed area.

Assessment: It is near-certain that the operational phase would have no adverse effect on nesting birds.

Reptiles

There will be permanent loss of suitable reptile habitat, although abundant other suitable habitat is present to all sides, whilst 19.7ha of retained grassland will be managed for the benefit of biodiversity.

Assessment: It is near-certain that the operational phase would have no adverse effect on reptile populations.

Otter

The application site is of Site value for Otter.

There will be no loss of suitable habitat and a realistic, ecological pathway of effect does not exist for the operational phase.

Assessment: It is near-certain that the operational phase would have no more than a negligible effect on Otter.

6. Mitigation

The following mitigation measures will be adopted and are detailed in the Ecological Constraints and Opportunities Plan Map 4.

6.1. Construction phase

The following mitigation measures would be provided to minimise effects during the construction phase:

- Design and delivery of a Construction Environment Management Plan (CEMP) that incorporates ecological protections for all sensitive ecological features. This will include:
    - statement of responsibilities
    - duties of the Ecological Clerk of Works (ECoW)
    - ecological mitigation during the construction phase
    - rigid control of worksite boundaries
    - control of waste
    - storage of materials, including oils and other chemicals
    - dust management plan
    - pollution prevention
- Construction will be limited to daylight hours in the bat active period April to October inclusive. Security lighting will be PIR activated and directed into the site away from wooded boundaries. No permanent lighting will be installed in the construction phase.
- The security fence during construction will have gaps at the corners to allow animals trapped within the construction site to escape.
- Where grassland habitat will be removed, reasonable avoidance measures for reptiles and amphibians will be adopted as follows:
    - Active season (March to October)
      Grassland should initially be cut to a height of no more than 10cm and work in a direction towards retained habitat. This will encourage any reptiles to disperse naturally. After at least 48hrs, a second cut will be made as close to ground level as possible. This should ensure that any reptiles, if present, are displaced from the construction site. Once cleared, vegetation within the works area should be maintained below 10cm for the duration of the works to prevent attracting reptiles back into the area.
    - Hibernation season (November to February)
      Features with potential for hibernating reptiles, such as stone or woodpiles, along with grassland tussocks, should be cleared under an ecological watching brief with turf removal using a toothed bucket.
- Any activities affecting potential bird nesting habitats should be completed during the period September to February inclusive, outside the accepted bird nesting season. If this is not practicable, prior to the start of works these habitats should be thoroughly inspected by a suitably qualified person prior to disturbance or removal. If nesting birds are found, all activities likely to damage the immediate area should be delayed until chicks have fledged.
- Any deep trenches left open at night (>1m deep) will have some means of escape for mammals, such as the placement of a scaffolding board at one end.

- All excavations will be checked at the start of works and prior to the commencement of any works activities to ensure large mammals are not present or have become trapped overnight.
- Any temporarily exposed open pipe system should be capped in such a way as to prevent mammals gaining access, as may happen when contractors are offsite. If pipes are left for an extended time, periodic checks will be carried out to ensure that the pipe is inaccessible to animals
- Night time working will be minimised to reduce disturbance to nocturnal and crepuscular fauna. Where this is not possible, security lighting used in the compound and those areas where lighting is absolutely necessary to ensure safe working conditions will be angled downward to reduce light spill into adjacent areas. Lighting outwith the compound will be switched off when no works are being undertaken. Other required lighting will be directed to where it is needed and away from features (including tree lines, watercourses/riparian habitats, etc.) to minimise light disturbance
- The security fence will have gaps to allow animals trapped within the construction site to escape.
- An updated protected species assessment will be completed at least 3 months prior to the start of construction works. If additional mitigation measures are required, these will be reflected in an updated CEMP. If changes in species distribution result in the requirement of any licenses, this would be discussed with the planning authority[10] and NatureScot at the earliest opportunity.

6.2. Operational phase

The following mitigation and enhancement measures are provided for the operational phase:

- Undeveloped buffers to the site boundaries will be planted and managed to create an additional 3.35ha of woodland habitat and
- 19.7ha of retained grassland managed for biodiversity value
- To avoid impacts on nesting birds, woodland will be managed between November and early March.

[10] The planning authority will need to determine if the application passes the three legal tests for licensing

7. Residual impacts

Residual impacts on valued ecological receptors during the construction and operational phases are minimal, with no effect being significant at the level of assessment. Detail of potential impacts and their significance at the level of assessment are given in Table 5 below. Where no reasonable pathway of effect exists and pre-mitigation impact has been discounted, the receptor is not considered here.

This section does not consider de-commissioning effects as there are too many unknowns at this stage, although the scale of effect is likely to be less than that associated with construction.

Table 5. Summary of residual impacts following mitigation

Receptor (valuation)	Description of impact	Magnitude of potential impact	Level of effect (incl: adverse or beneficial, short term or permanent, short, medium or long term)	Mitigation	Residual impact - Significant / not significant?
Construction phase					
Long Plantation Ancient Woodland (Local)	Accidental pollution	Minor	Short term adverse	Adoption of a suitable CEMP, including pollution control	Negligible
Amphibians (common and widespread) (Site)	Potential for harm	Minor Potential for offence	Short term, adverse	Adoption of a suitable CEMP, including reasonable avoidance measures to be adopted during site clearance	Negligible Offence avoided
Badgers (Site)	Becoming tapped within the operational site	Minor	Short term, adverse	Adoption of a suitable CEMP, including any deep trenches left open at night (>1m deep) having some means of escape for Badgers. Pre-construction badger survey completed and updated CEMP/licencing provided if needed	Negligible

Breeding birds (site)	Accidental damage to nests and harm to chicks, and temporary habitat loss to construction compounds.	Minor Potential for offence	Temporary, adverse	Adoption of a suitable CEMP, including reasonable avoidance measures to be adopted during site clearance	Negligible Offence avoided
Reptiles (site)	Potential for harm	Minor Potential for offence	Short term, adverse	Adoption of a suitable CEMP, including reasonable avoidance measures to be adopted during site clearance	Negligible Offence avoided
Otter (Site)	Potential for harm	Minor Potential for offence	Short term, adverse	Pre-construction otter survey completed and updated CEMP/licencing provided if needed	Negligible Offence avoided
Operational phase					
Other Lowland mixed deciduous woodland (Local)	Loss of 0.68ha woodland habitat	Minor	Long-term, adverse	Planting and management of an additional 3.35ha of woodland	Moderate long-term gain is considered significant at the level of assessment

8. Cumulative effects

Cumulative impacts are the additional changes caused by a proposed development in conjunction with similar developments or as the combined effect of several developments. An assessment of the cumulative impact arising from the proposed development at this site requires that relevant information relating to the individual impacts of adjacent developments be available.

Approved developments that have the potential for a cumulative impact, and with sufficient data available within the public domain, are considered here.

Cumulative impacts arising from two or more developments may be:

- Additive - effects are summed
- Antagonistic – the cumulative impacts are less than their summed values
- Synergistic – the cumulative impact is greater than the summed impact.

Other nearby energy storage applications considered for cumulative effects are detailed in Table 6, along with a summary of site-specific residual impacts, and the likelihood of cumulative impacts.

Table 6. Cumulative impacts assessment

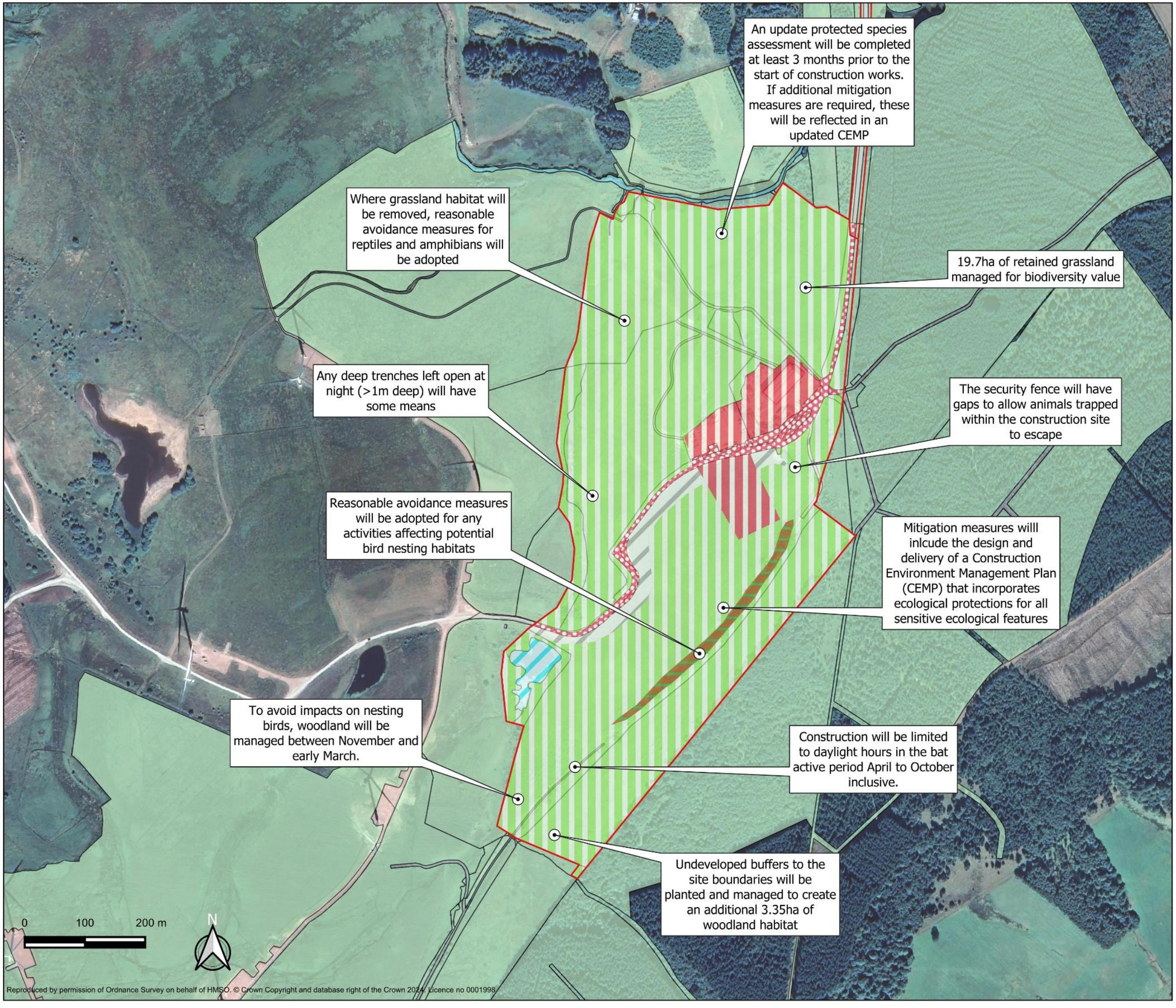
ECU reference	Name	Location	Relationship to Assessment Site	Description	Assessment of residual impacts taking into account mitigation.	Likelihood of cumulative impact
00006063	High Netherfauld I BESS	Land 390M NNW Of High Netherfauld House Farm Tower Road, Douglas .	2.8km to the north east	Application type: Battery Energy Storage System (BESS) (502.5MW) Screening Request	No information available	Not taken into account
00004698	Coalburn II Energy Storage Facility	Land at Broken Cross Open Cast Mine, Tower Road, Douglas, ML11 9PB	3.9km to north east.	Application type; BESS scheme 1GW, Consented Development	No formal assessment of ecological impacts is provided on the ECU portal, although much can be inferred from NatureScot comments (Ref: CDM169894 where it was stated that the impacts are unlikely on great crested newt, breeding birds, otter, water vole, and roosting bats.	Cumulative impacts are unlikely.

					This development is on the far side of the M74, which creates a significant barrier to most protected and notable species.	
00003548	Coalburn BESS	Land north of Birkhill, Cairnhouses Road, Douglas, MLL 0RS	2.8km to the north east	BESS scheme 500 MW Consented Development	The Ecology chapter of the ES concluded, “Overall, the effects of the Project are predicted to have no significant effects on designated sites, species or habitats”	Cumulative impacts can be discounted
00004799	Carlisle Road Battery Energy Storage System	Coalburn Substation ML11 0JU	4.2km to the north	Battery Energy Storage System Development (50 MW) Consideration	The Environmental Report concluded: “Proposed enhancements included within this report ensure adverse impacts on surrounding habitats, ecological designations, and both notable and protected species are avoided through both construction and operation phases of the Proposed Development. “	Cumulative impacts can be discounted

Conclusion

Where relevant information has been available, each of the developments assessed for cumulative impacts has concluded that no significant effects are likely. Where relevant information is not available, a full assessment of cumulative impacts is not possible. However, the limited transboundary effects of the proposed development, in combination with the considerable separation distance to these projects, make it unlikely that cumulative impacts will occur.

Cumulative impacts on ecological receptors is unlikely.



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Legend

- Redline
- Target note
- Lowland acid grassland
- Other lowland mixed deciduous woodland
- Developed land. sealed surface
- Artificial unvegetated unsealed surface
- Bare ground
- Pond

Title: Map 4. Ecological constraints and opportunities plan

Project: Hagshaw LDES

Checked by: CDH Version: 01
Date: 30.4.25