Title	**Proposed Manure Store, Llwydiarth, Dolywern, Pontfadog, Llangollen, LL20 7AG – Walkover Survey & Biodiversity Statement**
Date issued	**23rd January 2025**
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Reviewed by	**Tom Knight**
Client	**Mr Glyn Owen**
Report Version	**C559/ V1.0**

1 Introduction

Background

1.1 This report presents the findings of an ecology walkover survey of land at Llwydiarth, Dolywern, Pontfadog, Llangollen, LL20 7AG. The walkover survey was required to consider whether there may be any ecological constraints due to the proposed construction of an (above ground) manure store at NGR 322372, 337769, along with an associated access trackway. Llwydiarth is a farm comprising a farmstead/ agricultural buildings and surrounding land, approximately 4.5 km to the southeast of Llangollen.

1.2 A Biodiversity Statement is also provided. As such this report includes the following:

1. A description and assessment of the existing habitat/ (potential) protected species to be impacted by the proposed manure store/ trackway.
2. Potential ecological constraints and recommendations.
3. Identification of locations and opportunities for potential ecological enhancements.
4. Demonstration of how net benefit for biodiversity (and ecosystem resilience) will be secured and maintained. Full details of the recommended ecological enhancements.

1.3 A planning application has been submitted to Wrexham County Borough Council (WCBC) (Ref: P/2024/1646) for which this report would provide supporting information. Consultation has been sought with Emma Broad (WCBC's Ecology and Biodiversity Officer) to agree the approach[1] and inform this report[2].

2 Methodology

Walkover Survey

2.1 The walkover survey focused on the footprint of the proposed manure store/ trackway as indicated on a hand annotated/ scanned plan provided by Mr G. Owen (hereon referred to as the 'survey site'), along with land within an approximately 30 m buffer (hereon referred to as the 'wider survey site'). Immediately adjacent land was viewed from access boundaries where this was deemed relevant. The survey site extends to approximately 0.11 hectares and, along with the wider survey site, is indicated on *Figure 1* appended to this report.

2.2 The existing land use afforded by the survey site comprises a small part of a larger improved grassland agricultural field (used for livestock grazing). The wider survey site is also dominated by this, and an adjacent, improved grassland field, but also includes a

[1] The walkover approach was confirmed as acceptable by emails dated 10&11/12/24.
[2] The NBB recommendations as included within this document have been agreed in principle by emails on 22&23/01/25.

narrow zone of scrub (associated with a fenced field boundary), and a small corner of a broad-leaved woodland.

2.3 The walkover survey involved walking the survey/ wider survey sites making notes on the habitat/ vegetation and assessing the potential for protected or other priority/ notable species to be present. It was undertaken on 20th January 2025 by Max Ellson of Marches Ecology. The weather was cloudy and cold, with occasional light rain.

2.4 The MAGIC[3] website has been consulted to determine whether there are any statutory protected sites close to the survey site and that may have implications for the proposed development. No information on non-statutory protected sites has been obtained as part of this study.

Survey Limitations

2.5 Occasionally the scrub as outlined in *paragraph 2.2* was sufficiently dense enough as to preclude access. In addition, the use of the fields for intensive livestock (Dairy Cows and Sheep) grazing in the recent past may have obscured signs of protected species (such as footprints, foraging). January is a sub-optimal time to survey habitats/ plants (with many plants, for example, having died back/ often not visible at this time of year). None of these survey limitations significantly affected the findings of the survey and therefore the conclusions and prescribed avoidance/ mitigation measures.

3 Proposed Development

3.1 The existing site and proposed development are indicated on a hand annotated/ scanned plan provided by the client.

3.2 The focus of the proposal is the installation of the manure store – which will be an above ground slurry storage system (tank), to be supplied and constructed by Dai Double H Slurry Systems and Agricultural Services: https://www.daidoubleh.com/slurry-storage-systems-and-servicing.

3.3 The hand annotated plan indicates that the approximate diameter of the manure store will be 27 m; it will be constructed in the corner of a field, approximately 86 m east of existing agricultural sheds. It will be offset by approximately 12 m from a boundary fence to the south. The vertical sides of the store will be green sheet metal.

3.4 An access trackway will be constructed – this will be approximately 3 m wide and will utilise crushed slate (proposed to be site won from excavation works required to site the manure store).

3.5 It is understood (Mr G. Owen, *pers. comm.*) that any disturbed grassland will be resown with an agricultural grassland mix on completion of the construction works.

3.6 External lighting will not form part of the scheme.

3.7 No further information is currently available.

[3] https://magic.defra.gov.uk/

4 Results

Statutory Protected Sites

4.1 The closest statutory protected sites (the boundaries of which are concurrent) are located approximately 475 m to the southeast of the survey site and comprise: River Dee and Bala Lake Special Area of Conservation (SAC)/ River Dee/ Afon Dyfrdwy Site of Special Scientific Interest (SSSI).

4.2 The River Dee and Bala Lake SAC has been designated for its populations of Bullhead (*Cottus gobio*), River Lamprey (*Lampetra fluviatilis*), Brook Lamprey (*Lampetra planeri*), Sea Lamprey (*Petromyzon marinus*), Atlantic Salmon (*Salmo salar*), Floating Water-plantain (*Luronium natans*) and Otter (*Lutra lutra*), as well as for the floating vegetation often dominated by water-crowfoot. The River Dee SSSI is a component part of the River Dee and Bala Lake SAC. It has been designated for its fluvial geomorphology, Carboniferous geology, range of river habitat types, saltmarsh transition habitats and populations of a range of fish, plants, mammals and invertebrates.

4.3 There is no obvious/ direct hydrological link between the River Dee and the survey site.

4.4 There are no other statutory sites within 1 km.

Habitat and Flora

4.5 Target Note locations (numbered 1 for the survey site, and 1a, 2, 2a, 3, 3a-c, 4, 5, 6 and 6a for the wider survey site) described in the text below are indicated on *Figure 1*; no separate target note descriptions are provided.

Survey Site

General

4.6 The survey site comprises a small part of a larger improved grassland agricultural field (used for livestock grazing) at *Target Note 1.* This extends into the wider survey site (and beyond). There are no other habitat features.

Grassland

4.7 The improved grassland field at *Target Note 1* appears to be frequently grazed (by Dairy Cows) (although no livestock were present at the time of the survey). The sward was largely to approximately 0.15 m high, and locally patchy in coverage (largely due to grazing pressure). The sward is grass dominated, this in turn being dominated by *Lolium perenne* (Perennial Rye-grass); other grasses are present at low levels of abundance and include *Poa pratensis* (Smooth Meadow-grass), *Agrostis stolonifera* (Creeping Bent) and *Poa annua* (Annual Meadow-grass). A range of characteristic (tall-) herbs/ forbs are scattered throughout, largely at low levels of abundance, such as *Trifolium repens* (White Clover), *Ranunculus repens* (Creeping Buttercup), *Cirsium arvense* (Creeping Thistle), *Cerastium fontanum* (Common Mouse-ear), *Taraxacum* sect. *Ruderalia* (Common Dandelion), *Jacobaea vulgaris* (Common Ragwort), *Stellaria media* (Common Chickweed), *Urtica dioica* (Common Nettle), *Veronica persica* (Common Field Speedwell), and *Rumex obtusifolius* (Broad-leaved Dock).



Above and Below. View of the improved grassland field (*Target Note 1*) which comprises the survey site. Above: photo taken from approximate western end of survey site, looking east along proposed alignment of trackway. The scrub zone in the wider survey site (*Target Note 3*) is on the RHS. Below: photo taken from approximate northeastern edge of survey site, looking southwest to proposed footprint of the manure store.



Wider Survey Site

General

4.8 The wider survey site is also dominated by improved grassland – associated with the field at *Target Note 1* where the survey site is located, and also adjacent fields (*Target Note 2*) to the south and east. It also includes a narrow zone of scrub (associated with a fenced field boundary) (*Target Notes 3, 3a* and *3b*), and a small corner of a broad-leaved woodland (*Target Note 4*). A small number of other habitat features were also recorded.

Scrub

4.9 A narrow zone of scrub forms a boundary feature at *Target Note 3,* to the south of a fence. This resource appears (semi-)mature and largely unmanaged; it can be locally dense/ impenetrable. The zone at *Target Note 3* can be 3-4 m (occasionally 5 m) wide, and is associated with a steep section of slope; shrubs/ trees here can be to 3 m high, locally more. Woody species recorded include *Prunus spinosa* (Blackthorn), *Sambucus nigra* (Elder), *Crataegus monogyna* (Hawthorn), *Corylus avellana* (Hazel), *Quercus robur* (Pedunculate Oak) (including one young tree at *Target Note 3c*), *Rosa canina* agg. (Dog-rose) and *Ilex aquifolium* (Holly). Livestock appear to frequently access throughout (where not impenetrable). The base layer was not assessed in detail however it appears to support a range of characteristic grasses and forbs/ herbs, the latter including *Digitalis purpurea* (Fox-glove), *Umbilicus rupestris* (Navelwort), *Rumex acetosella* (Sheep's-sorrel), *Viola* sp. (a Violet), *Stellaria holostea* (Greater Stitchwort), and *Potentilla sterilis* (Barren Strawberry).



Narrow zone of scrub at *Target Note 3.* Photo taken from south of western end of survey site, in adjacent field to south, looking east. Also see photo above.

4.10 At *Target Note 3a,* to the east, the scrub zone widens out, incorporating a small/ low old quarry. Here the scrub resource is mature, and also includes occasional mature trees.

Additional woody species recorded were *Fraxinus excelsior* (Ash) and *Malus sylvestris* (Crab Apple). The base layer is frequently bare (due to livestock access), or locally supporting tall-herbs (Common Nettle) or similar plants to those present at *Target Note 3.*

4.11 To the west (adjacent to the main farm buildings) at *Target Note 3b*, the scrub resource also includes *Acer campestre* (Field Maple). Here it is located on steep/ unstable ground and was not directly accessed.



Scrub at *Target Note 3b.*

Grassland

4.12 The species-composition of the improved grassland fields at *Target Note 2* was not recorded in detail. At *Target Note 2a* sloping land near the scrub resource locally supports semi-improved grassland, including species such as *Achillea millefolium* (Yarow), Sheep's-sorrel and *Pilosella officinarum* (Mouse-ear Hawkweed); it was not assessed in detail.

Other Habitats/ Features

4.13 Other habitats/ features within the wider survey site are restricted to:

- a small area supporting old tyres/ agricultural machinery, the remains of an old fallen tree and tall-herb vegetation (accessed by livestock) at *Target Note 1a*,
- a small corner of a larger broad-leaved woodland (*Target Note 4*),
- a fence line with scattered mature shrubs (*Target Note 5*), and
- the corner of an agricultural shed (*Target Note* 6) and associated *Rubus fruticosus* agg. (Bramble) scrub (*Target Note 6a*).



Top of photo: open broad-leaved woodland at *Target Note 4.* LHS: fence/ scattered mature shrubs at *Target Note 5.*

Flora

4.14 No plant species of note in the local context, or included on *Schedule 9* of the *Wildlife and Countryside Act 1981,* were recorded within the survey or wider survey sites.

Fauna

4.15 Only those species/ species groups that might reasonably be expected to be present at this location or potentially be affected by the proposed development are considered here.

Badger

4.16 No evidence of Badger (*Meles meles*) was recorded within the survey site. [redacted]

4.17 An animal breach was recorded under the fence line associated with the scrub zone at *Target Note 3.* Whilst the immediate earth under the breach appeared bare, there was no associated path visible, and no positive evidence of Badger was recorded. Two animal holes were also recorded from this area – one in the narrow scrub zone at *Target Note 3,* and another associated with the scrub/ quarry at *Target Note 3a.*

- The feature at *Target Note 3* comprises an entrance hole under a tree root. There was a small spoil pile and whilst the tunnel was open, it was small, and there was leaf litter and debris in the entranceway. Internally the base of the tunnel was not compacted.
- At *Target Note 3a*, a hole was located under a large tree root, immediately above a small, quarried rock face (approximately 1 m high). The hole was open/ free from

debris, it was small inside and there was no spoil pile. Internally the base of the tunnel was not compacted.

Despite extensive searches, no evidence of Badger was found to be associated with either hole (or spoil pile), and there was no associated pathways in the vicinity.

Bats

Survey Site

4.18 The survey site comprises part of a larger improved grassland field. There are no potential bat roosting features.

4.19 The improved grassland resource offers negligible opportunities for foraging/ commuting bats; such resources are rather provided by the edges of scrub *etc.* within the sider survey site.

Wider Survey Site

4.20 There are no potential roosting opportunities within approximately 10 m of the survey site. Buildings or trees within the wider survey site which are outside of this distance (for example associated with *Target Notes 3a, 3b, 4* and *6*) were not assessed in detail, however a small number of trees with bat roost potential were recorded, for example:

- a mature Pedunculate Oak and a mature Ash on the western end of the woodland at *Target Note 4* with low (at most) and low bat roost potential,
- a mature Ash towards the eastern end of the scrub at *Target Note 3a* with low-moderate bat roost potential, and
- a mature Hawthorn in the scrub at *Target Note 3b* with low bat roost potential.

4.21 The building at *Target Note 6* comprises a metal clad, partly open agricultural shed, and was not assessed in detail.

4.22 Overall, the habitat resources provided by the wider survey site are likely to be of limited potential value for foraging/ commuting bats, these being largely restricted to the resource provided by the scrub at *Target Notes 3, 3a/b*, and the open woodland at *Target Note 4.* However these largely do not provide high/ sheltered flyways, and are likely to be of limited potential value. These resources are however part of a hedgerow/ woodland network in the immediate/ wider landscape.

Great Crested Newts

4.23 There is no aquatic habitat (suitable for breeding Great Crested Newts (*Triturus cristatus*)) within the survey or wider survey sites.

4.24 The terrestrial habitat resource provided by the survey site comprises grazed improved grassland which is of negligible/ low potential value for this species (although animals would be able to traverse across it and use for example small mammal holes *etc.* should such features be present). Resources of greater potential value are present in the wider survey site, for example at *Target Notes 1a, 3/3a/b, 4,* and *6a,* providing moderate-high potential value habitat (although this will locally depend on the level of access/ grazing/ trampling *etc*. by livestock). However, the potential presence of Great Crested Newts in terrestrial habitat is governed more by the proximity of a suitable breeding pond than by the quality of the terrestrial habitat.

4.25 An initial review of the OS map 1:25, 000 scale and relevant internet-based mapping including aerial photography[4] suggests that there are no waterbodies within approximately 250 m of the survey site. Taking this into account, along with author knowledge of the area, the likelihood of Great Crested Newts utilising terrestrial habitats within the survey site is deemed to be negligible. As such this species will be discounted and will not be considered further in this report.

Reptiles

4.26 Given the habitats present and the perceived intensive levels of agricultural use, the potential presence of reptiles within the (wider) survey sites is deemed to be negligible. As such this species group will be discounted and will not be considered further in this report.

Birds

4.27 There are no nesting opportunities within the survey site. Opportunities presented by habitats/ features within the wider survey site include those afforded by scrub, trees and built structures.

5 Potential Ecological Constraints and Recommendations

Introduction

5.1 The information provided in *Sections 1-4* of this report has been utilised to undertake a brief assessment of the potential ecological issues associated with the proposed development. Refer to *Appendix 1* for a summary of relevant species-specific legislation.

Statutory Protected Sites

5.2 The proposed development would not result in any direct impacts on any statutory protected sites. Due to the nature/ scale of the proposal, habitat within the survey site and location of the survey site, no indirect impacts are anticipated[5].

Habitats and Flora

5.3 Direct impacts (permanent or temporary) to vegetated habitats associated with the proposal will be limited to the loss of/ temporary disturbance to improved grassland (associated with an agricultural field) at *Target Note 1.* The grassland resource is considered to be of no more than site[6] value (due to its species composition, quality (disturbance *etc.*), and geographical location).

5.4 No further survey with regards habitat/ flora is deemed necessary. Recommendations provided below (under 'General Avoidance and Mitigation Measures') include for temporary fencing of adjacent retained habitats (scrub/ trees/ woodland) at *Target Notes 3/3a/b, 5* and *4*.

[4] https://www.google.co.uk/maps/@52.9300658,-3.1578676,1713m/data=!3m1!1e3?entry=ttu&g_ep=EgoyMDI1MDEyMC4wIKXMDSoASAFQAw%3D%3D

[5] Potential runoff/ nutrient impacts on the River Dee and Bala Lake SAC during the lifespan of the manure store are outside the scope of this report and should be dealt with separately within the planning submission as required.

[6] In accordance with CIEEM (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Chartered Institute of Ecology and Environmental Management, Winchester.

5.5 The general advice contained in the Guidance for Pollution Prevention (GPP) leaflets produced by SEPA, EA and the Environment and Heritage Service (Northern Ireland) should be adhered to, particularly the following:

- GPP1: Understanding Your Environmental Responsibilities – Good Environmental Practices.
- PPG6: Working at Construction and Demolition Sites.

Biosecurity

5.6 As a precautionary approach, the implementation of basic/ standard best practice biosecurity measures[7] are recommended.

Badger

5.7 Badgers are known from the locality, with foraging recorded in the wider survey site. No setts have been recorded; no Badger evidence was found to be associated with two animal holes in adjacent scrub at *Target Notes 3/ 3a.* As such no further survey is perceived to be required with regards Badger at the current time.

5.8 Loss of the small area of improved grassland, whilst a loss of potential Badger foraging habitat, is not deemed significant.

5.9 As Badgers are known to occur in the area, a 'watching brief' will be implemented by site personnel before/ during the construction phase. As a precautionary approach, as there is the potential for obstruction of Badger movements during the construction period, where construction includes the excavation of deep holes or trenches, such features should be filled in overnight or otherwise made safe by securely covering them, or the provision of suitable ramps. In addition, all open ends of pipes (above approximately 150 mm diameter) or other materials (such as liquids or other potentially harmful substances) that Badgers may access should be securely blocked up/ stored overnight. Excavator buckets, other plant, pipes, *etc*. will all be checked for any trapped animals at the start of each working day. Should a trapped Badger be encountered at any time an Ecologist should be contacted immediately for advice. Any fencing that is required during the construction and operation phases will take into account Badger movements so that they are not unnecessarily obstructed.

5.10 If an animal hole that might be a Badger sett is located in close proximity to works, the following protocol should be followed:

- All work must be stopped within 30 m of the hole. The Site Manager (or equivalent) should be immediately notified; if s/he is not available an Ecologist should be contacted.
- An Ecologist will need to subsequently confirm whether the hole is inhabited by a Badger or not and if so the status of the sett. If a sett is confirmed decisions can be taken regarding any requirement for licencing at that time.
- Work must not be re-started in this area until the Site Manager/ an Ecologist have provided the necessary authority.

[7] https://www.forestryengland.uk/sites/default/files/pdf/Biosecurity%20Policy.pdf

5.11 In addition:

- Any works undertaken during dawn/ dusk will be subject to particular care, with all vehicles being driven at low speeds and personnel maintaining a watching brief at all times.
- No night working or temporary external lighting will be included as part of the scheme.

5.12 Setts can be constructed at any time. As such, if the development works are not initiated within 6 months of the walkover (*i.e.* July 2025), a pre-works check (for setts) should be completed by a suitability qualified ecologist. Up-to-date decisions can be made on any subsequent requirements, such as licensing, at that time.

Bats

5.13 No further consideration regarding potential (in)direct impacts to roosting bats is required. This assumes a fenced buffer is maintained with adjacent trees during the construction works, as detailed in *paragraph 5.16/ bullet 1* below. Should this not be possible further consideration by an ecologist will be required.

5.14 The proposal will result in negligible potential (negative) impacts to foraging/ commuting bats (loss of improved grassland only). No (temporary/ permanent) external lighting is to form part of the scheme.

Birds

5.15 The destruction of any bird nests that are in use is illegal. The scheme will impact improved grassland only. As such there any no perceived impacts to nesting birds, and/ or (timing) implications associated with habitat clearance. Should any occupied nests be found during the construction phase, a buffer zone (determined on the basis of the species concerned and the location of the nest in the context of the surrounding vegetation, but no less than 5 m) would be retained until it can be ascertained that the chicks have left the nest. The buffer zone will be appropriately fenced and signed.

General Avoidance and Mitigation Measures

5.16 The potential risks to the various ecological resources detailed in *Section 4* above are generally considered to be negligible. Given the nature of the survey site, likely scale and duration of the works, it is considered sufficient for a watching brief to be maintained by personnel throughout the works. As a precautionary approach the following general avoidance and mitigation measures should be adopted throughout preparatory/ construction phases:

1. Protection Measures for Retained Scrub/ Trees. Due to the proximity of retained scrub/ trees (particularly at *Target Notes 3/3a/c,* but also *Target Notes 4* and *5*) it is recommended that temporary protective fencing (*e.g*., heras panels) is installed prior to the start of any works. This fencing should be aligned tight to the development boundary and ensure that a minimum 10 m buffer is established from adjacent trees at *Target Notes 4* and *3a*. It should remain in place throughout the construction work. The aim of this fencing is to avoid inadvertent damage to this habitat. Site personnel should be made aware of the purpose of this fencing.

6 Enhancement Measures: Net Benefit for Biodiversity

Introduction

6.1 Technical Advice Note 5 (Nature Conservation and Planning) (Welsh Assembly Government, 2009)[8] and Wrexham County Borough Council (2011)[9] seek developments to achieve net biodiversity gain. The requirement to secure and maintain net benefit for biodiversity (NBB) (through enhancements) was reinforced in a letter issued by the Chief Planner (Welsh Government) to all planning departments in October 2019. NBB has been defined as '*the concept that development should leave biodiversity and ecosystems in a better state than before, through securing long term, measurable and demonstrable benefit, primarily on site*'[10].

6.2 This was reiterated in a letter from the Minister for Climate Change to the Heads of Planning dated October 2023. An Annex[11] attached to this letter provided text to update Planning Policy Wales (PPW), which has been adopted in PPW 12 (Welsh Government 2024[12]). . Chapter 6 of PPW was updated as of 11/10/23 (and is now included in PPW 12) which provides '*further clarity .... on securing net benefit for biodiversity through the application of the step-wise approach, including the acknowledgement of off-site compensation measures as a last resort, and, the need to consider enhancement and long-term management at each step*'.

6.3 WCBC (2011, *op. cit.*) lists '*examples of how enhancements could be achieved on development sites*'. The options provided include for '*planting ... shrubs of local provenance*', '*connecting existing habitats with species-rich hedgerows*', and '*bird boxes*'. CIEEM (2022) states that '*a key requirement is that the measures put forward are suitable in the local context of the site*'[13]. As such it is proposed to plant a new native species-rich hedgerow and install bird boxes.

Assessment of Required Level of Provision

6.4 Construction of the new manure store/ trackway can be categorised as a small/ low impact proposal. The development of this site would not result in a significant impact on any valued ecological resource at this location.

6.5 NBB provision '*should be proportional to the extent and impact of development* (CIEEM 2022, *op. cit.*). The proposed compensation/ enhancements will therefore target priority habitats (hedgerow (a priority habitat under *Section 7* of the *Environment (Wales) Act 2016*)), and a priority species/ species of nature conservation interest likely to be present at the site (House Sparrow (*Passer domesticus*) (listed on *Section 7*)).

[8] Welsh Government (2009). *Planning Policy Wales - Technical Advice Note 5: Nature Conservation and Planning*. September 2009.
[9] Wrexham County Borough Council (2011). *Local Planning Guidance Note 32 Biodiversity and Development*. Adopted March 2011.
[10] https://www.gov.wales/targeted-policy-changes-planning-policy-wales-net-benefit-biodiversity-and-ecosystems-resilience
[11] *Annex to Heads of Planning Letter Dated 11 October 2023: Addressing the Nature Emergency through the Planning System: Updated National Planning Policy for Chapter 6 of Planning Policy Wales*.
[12] Welsh Government (2024). *Planning Policy Wales*. Edition 12, February 2024.
[13] CIEEM (2022). *Welsh Government's Approach to Net Benefits for Biodiversity and the DECCA Framework in the Terrestrial Planning System. CIEEM Briefing Paper September 2022*. CIEEM, Romsey.

Biodiversity Enhancement Recommendations

6.6 The locations of the proposed enhancements as detailed below are indicated on *Figure 2*. Where possible planting will utilise native species of certified British origin and ideally local provenance (Local Seed Zone 304).

Hedgerow Planting

6.7 It is proposed to plant approximately 105 m of native species-rich hedgerow to the north of the manure store/ trackway, see *Figure 2* (the alignment as shown is indicative only).

6.8 This resource will be planted as staggered, double rows with four to five plants per metre. A minimum of five native woody species will be planted to establish the hedgerow. It would be appropriate to source equal amounts of both the 'standard hedge mix' and the 'traditional hedge mix' from the Woodland Trust[14], and then intermix the saplings when planting. These two mixes include Hawthorn, Blackthorn, Hazel, Crab Apple, Dog-rose, *Cornus sanguinea* (Dog-wood) and Field Maple.

6.9 Bare-rooted forestry size transplants should be used with the individual plants being notch planted between November and March. They will be planted in accordance with the advice provided by the Woodland Trust[15]. The trees/ shrubs will need stakes and Rabbit guards, and be fenced from livestock.

Bird Boxes

6.10 The proposed boxes as detailed below will be installed under the direction/ advice of a suitably qualified ecologist to ensure correct installation. On installation the location of each box will be photographed, annotated on a plan as applicable, and a record kept accordingly.

6.11 2 no. House Sparrow boxes will be attached to the external eastern elevation of the existing agricultural shed at *Target Note 6* (*Figure 1*). These should, where possible, be at least 1 m apart, have unobstructed access, and not be sited above windows or doors. Installation advice can be found in Gunnell, Murphy & Williams (2013)[16].

- 2 no. Vivara Pro WoodStone House Sparrow Nest Box (double chamber)[17]. These will be attached at approximately the locations as indicated by orange stars on the photo below:

[14] https://shop.woodlandtrust.org.uk/hedge-mixes
[15] https://www.woodlandtrust.org.uk/plant-trees/advice/how-to-plant/
[16] Gunnell, K., Murphy, B. & Williams, C. (2013). *Designing for Biodiversity: A Technical Guide for New and Existing Buildings*. Second Edition. RIBA Publishing, London.
[17] https://www.nhbs.com/vivara-pro-woodstone-house-sparrow-nest-box



6.12 2 no. 'general purpose' bird boxes will be attached to suitable mature trees/ shrubs at *Target Notes 3/3a/c* (*Figure 1*).

- 2 no. 1B Schwegler Nest Box[18]. 1 no. 32 mm hole and 1 no. 26 mm hole. They should be sited out of reach, 3 m or more off the ground. Both should be located somewhere between (facing) north through east to southeast; avoiding prevailing winds and direct sunlight where possible. The boxes should generally be sited near shrubs/ other vegetation that will provide good cover for young birds. They should ideally be installed utilising wire or similar (not nails) to facilitate easy maintenance.

6.13 All bird boxes should be subject to checking/ cleaning out on an annual basis; refer below.

Maintenance and Monitoring

6.14 The importance of securing long-term management/ maintenance and monitoring is central to the NBB approach (*e.g.,* CIEEM 2022, *op. cit.*). This should also be proportional to the scale and impact of the development.

Hedgerow

6.15 Once the hedgerow has been planted, an area of at least 1 m^2 around them should be kept weed-free. This will be achieved either through the use of mulch mats or the appropriate application of glyphosate-based herbicides (such as Roundup) during the growing season. This maintenance operation should be undertaken once a year for the first 3 years. Watering may also need to be undertaken during establishment. Any losses will be replaced.

6.16 The young plants within the hedgerow should be cut back in the first year to approximately one-third of their height to promote bushy growth.

6.17 A well-established hedge will require trimming from about the sixth year. Ideally maintained hedges should be shaped to be 1.8-2 m high and at least 1.8-2 m wide. Once established, the requirement for annual management should be reviewed. If possible, the top and sides of the hedgerow could be left uncut every other year. Otherwise cutting should be undertaken after January but before March. Once established the hedge should be laid

[18] https://www.nhbs.com/1b-schwegler-nest-box

every 10-30 years between mid-November and early March. The best time to lay the hedge would be when stem growth reaches between 5-10 cm diameters at the base.

Bird Boxes

6.18 The Sparrow and general purpose boxes should be inspected annually and cleaned if necessary. This can be undertaken by the landowner. All maintenance should be carried out when the last bird has left the nest-box; at least October. Nest-boxes should be cleaned in late-autumn (late October/ November). At least 2 to 3 weeks should be allowed after fledging before undertaking any cleaning. The *Wildlife and Countryside Act 1981*, as amended states that cleaning should only be carried out between 1st August and 31st January and that any eggs present should be destroyed immediately. All nest material should be completely removed and disposed of safely along with any other debris. To ensure that parasite build-up is controlled the inside of the nest-box should be cleansed with boiling water. Care should be taken when opening nest-boxes as it is possible that they could be inhabited by bees, wasps or even bats.

6.19 It is important to remember that once discovered, a bat roost is legally protected and must not be disturbed. If a bat roost is suspected to be present a suitably qualified bat consultant or the Clwyd Bat Group[19] should be contacted and may need to undertake the annual maintenance operations detailed above.

6.20 The use of any of the bird boxes should be recorded during the nesting season (March to August inclusive). Records of nesting birds should be submitted to Cofnod[20] (the Local Environmental Records Centre for North Wales).

7 Appendix 1

Introduction

7.1 The species-specific legislation below is presented here due either to the actual or suspected/ possible presence of each species on the site or within the zone of influence and is therefore considered to be relevant for this study.

7.2 This sub-section provides a brief summary of key relevant species legislation. It should not be considered a comprehensive review and is not meant to be so. It is provided here for information only and is not intended to replace specialised legal advice. It does not replace the text of the legislation, but summarises the salient points.

Badger

7.3 The Badger is protected in Britain under the *Protection of Badgers Act 1992* and *Schedule 6* of the *Wildlife and Countryside Act 1981* (as amended). The legislation affords protection to Badger and Badger setts, and makes it a criminal offence to:

- wilfully kill, injure, take, possess or cruelly ill-treat a Badger, or attempt to do so;
- interfere with a sett by damaging or destroying it;
- to obstruct access to, or any entrance of, a Badger sett; or
- to disturb a Badger when it is occupying a sett.

Birds

[19] http://www.clwydbatgroup.com/
[20] https://www.cofnod.org.uk/Home

7.4 All species of bird are protected under *Section 1* of the *Wildlife and Countryside Act 1981* (as amended). The protection was extended by the *CRoW Act 2000*.

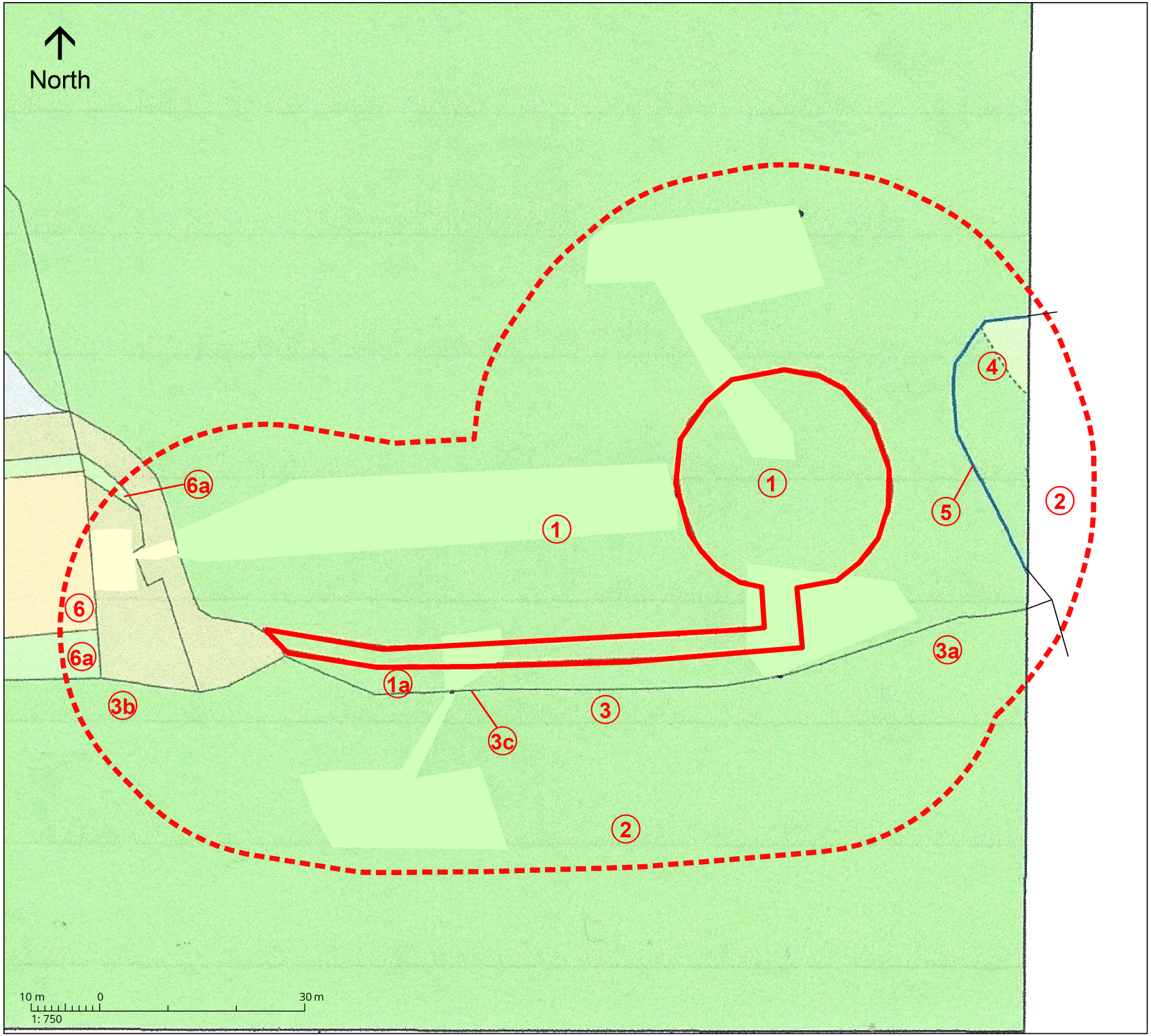
7.5 The legislation makes it an offence to intentionally or recklessly:

- kill, injure or take any wild bird;
- take, damage or destroy the nest of any wild bird while that nest is in use or being built; or
- take or destroy an egg of any wild bird.

7.6 Certain species of bird are listed on *Schedule 1* of the *Wildlife and Countryside Act 1981* (as amended) and receive protection under *Sections 1(4)* and *1(5)* of the Act. The legislation confers special penalties where the above mentioned offences are committed for any such bird and also make it an offence to intentionally or recklessly:

- disturb any such bird, whilst building its nest or it is in or near a nest containing dependant young; or
- disturb the dependant young of such a bird.

7.7 *Section 7* of the *Environment Act 2016* includes several birds.



Survey Site

Wider Survey Site
Approximate 30 m buffer

Target Note

C559 Proposed Manure Store, LLWYDIARTH, DOLYWERN, PONTFADOG, LLANGOLLEN, LL20 7AG - Walkover Survey & Biodiversity Statement

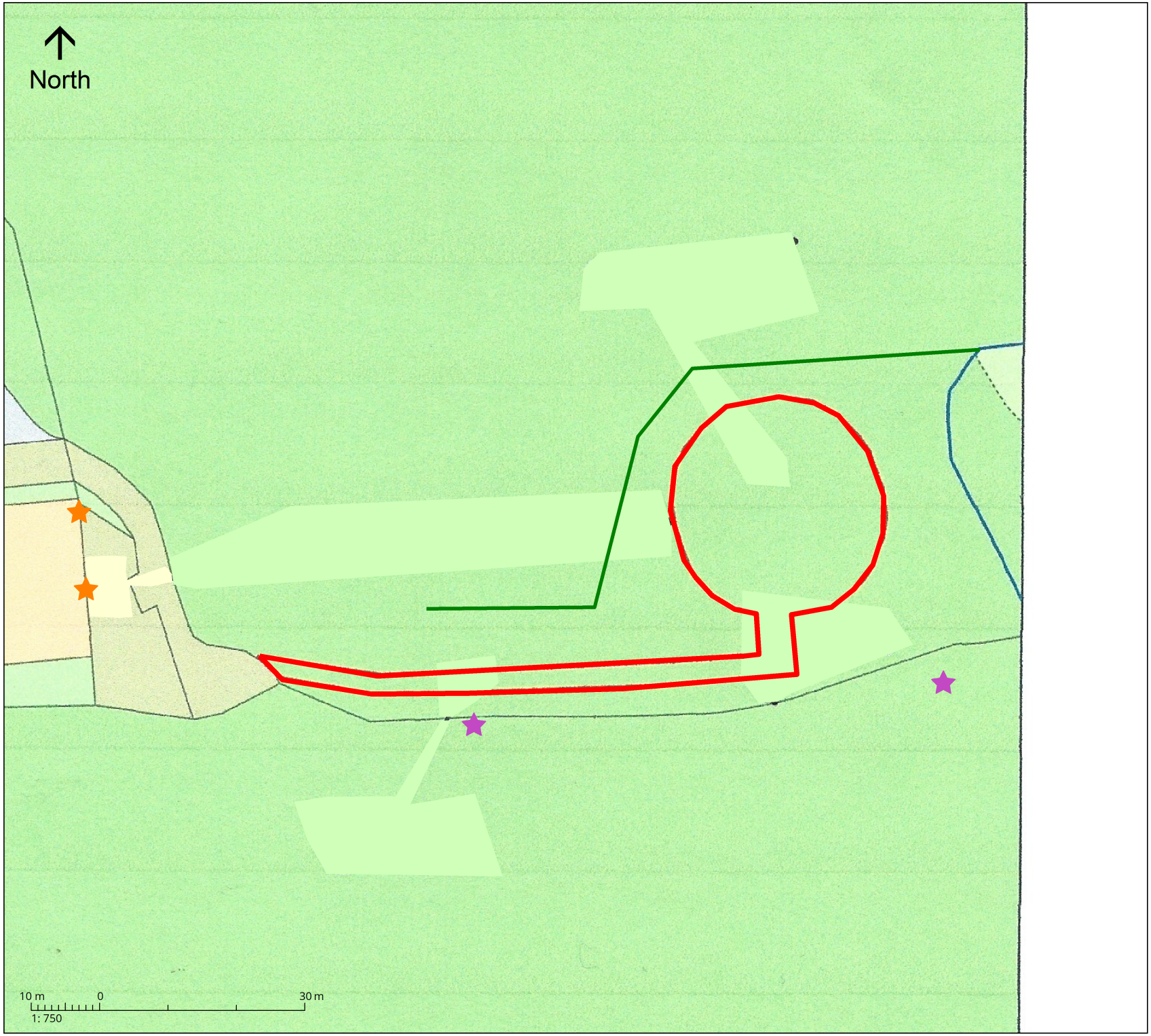
***Figure 1* - Target Notes**

Date: 21/01/2025

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Base mapping provided by the client.



Survey Site

New planted native species-rich hedegerow (105 m)

Approximate alignment only. Refer to ecology report.

House Sparrow box (double chamber) (2 no.)

Approximate location only. To be installed on eastern elevation of exisiting shed. Refer to ecology report.

1B General Purpose bird box (2 no.)

Approximate location only. To be installed on suitable trees/ mature shrubs. Refer to ecology report.

C559 Proposed Manure Store, LLWYDIARTH, DOLYWERN, PONTFADOG, LLANGOLLEN, LL20 7AG - Walkover Survey & Biodiversity Statement

***Figure 2* - Proposed NBB Measures**

Date: 22/01/2025

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Base mapping provided by the client.