



Biodiversity Opportunities Report

For

LIDL Great Britain Ltd

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Figure 1: Site Location

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1. Summary

- 1.1.1 LIDL Great Britain Ltd commissioned Thomson Environmental Consultants in February 2023 to undertake a UK Habitat (UKHab) Classification survey and habitat condition assessment at a free-range chicken farm at. The site location is shown on Figure 1. The site assessment also included a desk base study to identify records of protected species, designated sites, ancient woodlands and priority habitats for the full study area. The habitat survey results were used to calculate a baseline biodiversity value metric for the site. Proposed measures are then given for habitat retention, creation and enhancement to achieve a Biodiversity Net Gain (BNG).
- 1.1.2 The habitat survey results are shown on Figure 2. The c.16ha site was found to have a baseline biodiversity value of 63.26 habitat units and 1.32 hedgerow units. Photographs of the baseline habitats recorded on site are shown on Figure 3.
- 1.1.3 The proposed Habitat Management Plan for the site is given on Figure 4. In this scenario the majority of the existing habitats are retained and most of the existing modified grassland is enhanced to 'other' neutral grassland, increasing its biodiversity value. Woodland and hedgerow creation is also proposed to increase biodiversity value. The habitat enhancement and creation plan delivers 93.60 habitat and 2.73 hedgerow units. The outcome is a biodiversity net gain of 47.96% for habitats and 106.51% for hedgerow.
- 1.1.4 We have also recommended red squirrel boxes and invertebrate improvements to enhance the opportunities for wildlife on the site.
- 1.1.5 Details of how the newly created and enhanced habitats and hedgerow will reach their target habitat and condition is given in Appendix 2: Biodiversity Action Plan

2. Introduction

2.1 Overview

2.1.1 LIDL Great Britain Ltd commissioned Thomson Environmental Consultants in February 2023 to undertake a UK Habitat Classification (UKHab) survey and condition assessment to establish baseline conditions of the existing habitat, a free-range chicken farm owned and managed by Duncan Farms.

This information was then used in the Defra Metric 3.1 (Panks et al, 2022) to establish a baseline habitat score for the existing site. A Biodiversity Action Plan (BAP) has been produced which identifies ways the site can be management to deliver Biodiversity Net Gain (BNG) and improve opportunities for wildlife.

2.1.2 BNG aims to make sure that habitats for wildlife are in a better state than they currently are and is a way that landowners can demonstrate that they are contributing to the recovery of nature while managing their land. A biodiversity metric (Panks et al, 2022), based on the habitat survey, is used to calculate the biodiversity value of a land area pre-intervention (baseline value) and the predicted biodiversity value post intervention in accordance with the BAP for this site. The difference in 'biodiversity units' pre and post intervention indicates if the proposed BAP will result in a biodiversity loss or gain.

2.1.3 A summary of relevant government and local policy relating to biodiversity net gain is provided in Appendix 1.

2.2 Project Background

2.2.1 LIDL Great Britain Ltd are working with one of their suppliers Duncan Farms to explore how biodiversity enhancements can be delivered on their sites. Duncan Farms have a number of free-range chicken ranges and are working towards developing a carbon neutral egg.

2.2.2 Two candidate sites for biodiversity enhancement have been put forward by Duncan Farms -

2.2.3 The site has two 8ha chicken houses with a density of 2000 chickens per hectare. The site has some natural tree cover for the chickens as well as dust bathing and artificial shelter provided by pig shelters.

2.3 Current Management Information

2.3.1 Duncan Farms provided a range management plan (Duncan Farms, 2022), which provides the following relevant information;

2.3.2 The Management Plans are designed to encourage the birds outside, prevent poached/worn patches and to minimise any build-up of parasites and disease. There are 8 hectares per house of 16,000 birds a stocking density of 2000 birds per hectares. The range is mainly covered in vegetation and not permitted to be used for other purposes.

2.3.3 The map of the range shows we have provisions in place to provide:

- Natural cover in the trees and bushes
- Dust bathing and artificial shelter in the pig shelters
- Good vegetation cover within 5 meters of the house
- Scope for rotation of range

2.3.4 Natural cover provides the required shade/sheltered area of 8m² birds per 1000 birds. The site was previously woodland trust accredited where 20,000m² of land was planted with trees at (see Duncan Farms, 2022 for full details).

2.4 The Brief and Objectives

2.4.1 LIDL Great Britain Ltd commissioned Thomson Environmental Consultants on 24th February 2023 to:

- Complete a UK Habitat Classification survey, mapping and description of all habitats on site;
- Carry out a condition assessment of the habitats present on the site;
- Assess the base line BNG calculation on the habitats present on the site; and
- Provide a written report including relevant digitised mapping.

2.4.2 Based on the base line condition assessment, a Biodiversity Action Plan (BAP) for the site has been produced (Appendix 2), which includes measures which will increase the biodiversity value of the range. The BAP will include:

- An annotated map of the site showing where measures can be carried out;
- Quantification of numbers relating to areas of habitat creation;
- An indication of the percentage net gain achieved by the measures (BNG metric); and
Some general habitat creation/management prescription guidelines to maintain the standard.

2.4.3 A desk study search from the Local Record Centre was also undertaken to provide an indication of species and habitats that are present in the local area, which may be relevant to the BAP.

2.5 Limitations

2.5.1 The survey was carried out on 28th March 2023 which is a sub-optimal period for habitat surveying. However, the species recorded at this time were representative of the habitats present on site, and the survey timing is not considered a significant constraint.

2.6 Surveyors

- 2.6.1 Callum Salter, Senior Ecological Consultant, qualifying member of CIEEM. Callum has 5 years' experience of undertaking ecological surveys including UKHab and condition assessments.

1. Methodology

1.1 Desk Study

1.1.1 A study area was defined as an area that encompassed a 2km radius from a central point between the two sites. Records of protected species, designated sites, ancient woodlands and priority habitats were sought for the full study area. A 5km search area has been used to search for European designated sites.

1.1.2 Sources of information were as follows:

- The Multi-Agency Geographical Information for the Countryside (MAGIC);
- Aberdeenshire Borough Council's Local Plan; and
- North East Scotland Biological Records Centre (NESBReC);

1.1.3 Requests for information were sent to the North East Scotland Biological Record Centre on 30th March 2023, with responses received on 4th April 2023.

1.1.4 Records older than 10 years old have been omitted so that only contemporary and relevant records are considered.

1.2 Habitat Survey

1.2.1 The survey area was defined as an area of land of approximately 16 hectares (ha) that encompassed the land at Chicken Range. The survey area and the site cover the same boundary and are shown in Figure 1 and 2.

1.2.2 A survey using the UK Habitat Classification system (UKHab) (Butcher et al., 2020) was conducted throughout the survey area. This is a nationally recognised habitat classification system that is compatible with the DEFRA Biodiversity Metric for calculating biodiversity net gain values (Panks et al., 2022a).

1.2.3 The UKHab has five hierarchical levels and includes the identification of priority habitats (Habitats of Principal Importance listed under the Natural Environment and Rural Communities Act 2006) and Annex I habitats as listed under the European Habitats Directive. The five levels are:

- Level 1 - Biomes/major ecosystems (terrestrial, freshwater and coastal);
- Level 2 - Ecosystem types (i.e. woodland, grassland, heathland and scrub);
- Level 3 - Broad Habitats, based on those of the UK Biodiversity Action Plan (UKBAP);
- Level 4 - Habitats, including 47 priority habitats; and
- Level 5 - Habitats, including Annex I habitats.

- 1.2.4** In addition, non-hierarchical secondary codes were used to provide supplementary information. These included mandatory codes for habitat mosaics/complexes, priority and Annex I habitats that occur in multiple primary habitats and habitat origins (codes 10 - 41), plus any additional relevant secondary codes.
- 1.2.5** Prior to the survey, the potential habitats on the site were mapped using aerial imagery and government datasets (such as <http://www.magic.gov.uk/>) to the highest level of UKHab classification possible, which in most cases was either level 3 or 4.
- 1.2.6** During the field survey, the habitat map was ground-truthed, with all habitats mapped to the highest level possible.
- 1.2.7** Table 1 shows the meta-data used for this survey.

Table 1: Survey meta-data

Scope and purpose of the survey	Biodiversity Net Gain Opportunities Report
Area surveyed	371,053 852,951
Edition of UKHab used	UKHab-Professional
Minimum Mapping Unit (MMU)	25m ² for areas, 5m for linear features
Level of UKHab Primary Hierarchy used	Level 5, where possible
List of Secondary Code groups recorded	All secondary codes
Additional attributes recorded	Grassland quadrats, habitat condition assessment.
Map projection and units	LID001-005/402397/1
Date of survey	28 th March 2023
Organisation and individual undertaking the survey	Thomson Environmental Consultants, Callum Salter
References for any existing datasets that have been used	www.magic.gov.uk

1.2.8 The dominant and readily identified species of higher plant species from each habitat type within the survey area were recorded and their abundance was assessed on the DAFOR scale:

- D Dominant;
- A Abundant;
- F Frequent;
- O Occasional; and
- R Rare.

1.2.9 These scores represent the abundance within the defined area only and do not reflect national or regional abundances. Plant species nomenclature follows Stace (2019).

1.2.10 Target notes were made for any habitat features which were too small to map or are of particular ecological interest.

1.3 Biodiversity Metric

1.3.1 Biodiversity Net Gain (BNG) is an approach to development that leaves the environment in a better state than it was before. It is also an approach which encourages landowners and other stakeholders to manage their land to support nature conservation.

1.3.2 In April 2022, Natural England published the Biodiversity Metric 3.1 (Natural England 2022) as a successor to the 2021 “Biodiversity Metric 3.0”. The Biodiversity Metric 3.1 quantifies losses and gains in biodiversity in terms of BNG units.

Good Practice Principles for Biodiversity Net Gain

1.3.3 The Chartered Institute for Ecology and Environmental Management (CIEEM) has set out ten guiding principles for achieving BNG which must be applied all together, as one approach. The principals are summarised below:

- Principle 1: Apply the mitigation hierarchy. Do everything possible to first avoid and then minimise impacts on biodiversity. Only as a last resort, and in agreement with external decision-makers where possible, compensate for losses that cannot be avoided. If compensating for losses within the development footprint is not possible or does not generate the most benefits for nature conservation, then offset biodiversity losses by gains elsewhere.
- Principle 2: Avoid losing biodiversity that cannot be offset by gains elsewhere Avoid impacts on irreplaceable biodiversity - these impacts cannot be offset to achieve No Net Loss or Net Gain.
- Principle 3: Be inclusive and equitable. Engage stakeholders early, and involve them in designing, implementing, monitoring and evaluating the approach to Net Gain. Achieve Net Gain in partnership with stakeholders where possible, and share the benefits fairly among stakeholders.
- Principle 4: Address risks mitigate difficulty, uncertainty and other risks to achieving Net Gain. Apply well-accepted ways to add contingency when calculating biodiversity losses and gains in order to account for any remaining risks, as well as to compensate for the time between the losses occurring and the gains being fully realised.
- Principle 5: Make a measurable Net Gain contribution. Achieve a measurable, overall gain for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.
- Principle 6: Achieve the best outcomes for biodiversity. Achieve the best outcomes for biodiversity by using robust, credible evidence and local knowledge to make clearly-justified choices when:

- i. Delivering compensation that is ecologically equivalent in type, amount and condition, and that accounts for the location and timing of biodiversity losses
 - ii. Compensating for losses of one type of biodiversity by providing a different type that delivers greater benefits for nature conservation
 - iii. Achieving Net Gain locally to the development while also contributing towards nature conservation priorities at local, regional and national levels
 - iv. Enhancing existing or creating new habitat
 - v. Enhancing ecological connectivity by creating more, bigger, better and joined areas for biodiversity
- Principle 7: Be additional. Achieve nature conservation outcomes that demonstrably exceed existing obligations (i.e. do not deliver something that would occur anyway).
- Principle 8: Create a Net Gain legacy. Ensure Net Gain generates long-term benefits by:
 - i. Engaging stakeholders and jointly agreeing practical solutions that secure Net Gain in perpetuity
 - ii. Planning for adaptive management and securing dedicated funding for long-term management
 - iii. Designing Net Gain for biodiversity to be resilient to external factors, especially climate change
 - iv. Mitigating risks from other land uses
 - v. Avoiding displacing harmful activities from one location to another
 - vi. Supporting local-level management of Net Gain activities
- Principle 9: Optimise sustainability Prioritise Biodiversity Net Gain and, where possible, optimise the wider environmental benefits for a sustainable society and economy.

1.3.4 Principle 10: Be transparent. Communicate all Net Gain activities in a transparent and timely manner, sharing the learning with all stakeholders.

Biodiversity Metric Calculation Methodology

1.3.5 The metric calculates the biodiversity value by multiplying the area (hectares), distinctiveness (habitat type), condition (quality) and strategic significance (local significance for biodiversity) of each habitat parcel. To calculate the BNG units which may be achieved post-development, risk multipliers are also introduced to account for difficulty of habitat creation (delivery/risk factor) and time for created habitats to reach target condition (time to target factor). The calculations

were carried out using the “Biodiversity Metric 3.1 Calculation Tool” provided by Natural England (Panks et al, 2022).

- 1.3.6** The baseline BNG unit calculation in this report represents the biodiversity value of the site as it currently stands. The anticipated future BNG units for the site, following habitat creation and enhancement, have also been determined. The net change in BNG units was then calculated by subtracting the number of baseline BNG units from the future number of post-development/enhancement BNG units to get the number of BNG units that will be created or lost by the proposed works. If this number is positive, the development/enhancements have achieved biodiversity net gain. If the number is negative, there is a loss.
- 1.3.7** Area based habitats, hedgerow habitats and river habitats are considered separately in the tool to account for the differences in their ecological values and functions.

Baseline Formula

- 1.3.8** To calculate pre-development/enhancement baseline BNG units, habitat distinctiveness and condition are given numerical ‘scores’ which are multiplied, together with hectares or kilometres of habitat.

Habitat Distinctiveness

- 1.3.9** Habitats such as hard standing and buildings are assumed to have very low distinctiveness and are not included. The distinctiveness has been reduced for habitats which are either very small or created primarily for recreation/sport rather than biodiversity.
- 1.3.10** Each habitat parcel is assigned a multiplier based on the habitat distinctiveness. As a first step the area of the habitat parcel is multiplied by the habitat distinctiveness multiplier.

Condition Weighting

- 1.3.11** To enable the calculation of BNG units, an assessment of the condition of each habitat was made in accordance with The Biodiversity Metric 3.1 - habitat condition assessment sheets (Panks et al., 2022c). These sheets provide a series of condition assessment criteria, specific to each habitat type. A condition score of ‘good’ is awarded when a habitat passes the majority of the criteria (the number of which varies between habitat types). A condition score of ‘moderate’ is awarded when a habitat pass just over half of the criteria and ‘poor’ to habitats that pass just under half or less. A habitat parcel comprising areas of differing condition should be assessed separately to one another.
- 1.3.12** Once all applicable criteria have been assessed, assign a condition score of Good, Moderate or Poor based on the scoring instructions provided within the condition sheets. An interim score of Fairly Poor or Fairly Good should only be used in exceptional circumstances where a habitat does not fit the standard outcome of Good, Moderate or Poor. Justification for

allocating an interim condition score must be provided within the condition assessment proforma and within the Biodiversity Metric 3.1 assessors comments.

1.3.13 Habitat condition (or target condition when calculating post development BNG units from habitat creation or restoration) is assessed in the field and a multiplier applied, as shown in Table 2 below.

Table 2: Habitat condition weightings

Habitat Condition Multipliers	
Good	3.0
Fairly Good	2.5
Moderate	2.0
Fairly Poor	1.5
Poor	1.0

Strategic Significance

1.3.14 The location of habitat parcels is factored into the calculation based on whether the location has been identified locally as significant for nature conservation, as shown in Table 3.

Table 3: Strategic significance multipliers

Strategic Significance Multipliers		
High strategic significance	Within area formally identified in local strategy	1.15
Medium strategic significance	Location ecologically desirable but not in local strategy	1.1
Low Strategic Significance	Area/compensation not in local strategy/ no local strategy	1.0

Difficulty/Risk Factor

1.3.15 The risk associated with the creation or enhancement of a given habitat, and the difficulty of certain habitats to be successfully created, is assigned a difficulty multiplier to account for the uncertainty and risk of failure inherent in any action to create new habitat because of the unique physical and ecological features of every site, see Table 4.

1.3.16

Table 4: Risk multipliers

Difficulty categories	
Very High	0.10
High	0.33
Medium	0.67
Low	1.00

Time to Target Factor

1.3.17 The time scale for the creation/enhancement of habitats is assigned a temporal risk multiplier to compensate for the fact that there will not be an instant change in habitats and conditions which may result in a biodiversity deficit until the habitat has matured.

1.3.18 These time multipliers cover from zero years to over 30 years to reach the desired state and can be found in the “user guide” (Panks et al., 2022a).

2. Baseline Habitat Survey Results

2.1 Background

- 2.1.1 The purpose of this section is to provide desk study results, habitat descriptions and condition assessments for the baseline habitats recorded on the site. The location of habitats is shown on Figure 2 and photographs of habitats are given in Figure 3.

2.2 Desk Study

- 2.2.1 Responses were received from the North East Scotland Biological Record Centre (NESBReC) on 4th April 2023. The results are summarised below.

Designated Sites

- 2.2.1 No statutory or non-statutory designated sites were identified during the desk study within 2km of the site. No European designated site were located with 5km of the site.

Ancient Woodland outside Designated Sites

- 2.2.1 The desk study recorded one ancient woodland, greater than 2ha in area, located 1.7km to the north east of the survey area (Little Meadow Wood). A second ancient woodland is located 3.2km to the west of the site perimeter (Cunning Burn Wood).

Protected Species

- 2.2.2 Records were returned for 11 protected species within 2km of the central grid reference between the two sites, which were comprised of nine mammal species and three Schedule 1 bird species. Full details can be found in Table 5, below.

Other Species of Conservation Concern

- 2.2.3 Excluding the species already mentioned, records were returned for 14 priority species or species of conservation concern within 1km of the survey boundary, comprising one mammal species, 13 bird species, one amphibian species. Full details can be found in Table 5.
- 2.2.4 These records provide an indication of the species that are present in the area local to the range and were taken into account when producing the BAP for the site.

Table 5: Species records derived from the desk study

Common Name	Scientific Name	CHSR ¹ Schedule 2 or 5	WCA ² Schedule 1, 5 or 8	National Priority Species ³	Local Priority/ BAP Species	Red Data Book/ BoCC ⁴	Other	Grid Ref.
Mammal								
Badger	<i>Meles meles</i>						Protection of Badgers Act 1992	Confidential
Brown long eared bat	<i>Plecotus auritus</i>	Sch 2	Sch 5	✓				NJ696500
Brown hare	<i>Lepus europaeus</i>		Sch 5					NJ69465045
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	Sch 2	Sch 5	✓				NJ72095253
Daubenton's Bat	<i>Myotis daubentonii</i>	Sch 2	Sch 5	✓				NJ6851
Eurasian Red Squirrel	<i>Sciurus vulgaris</i>	Sch 2	Sch 5, 6	✓				NJ7102250536
Pine Marten	<i>Martes martes</i>	Sch 2	Sch 5	✓				NJ6955652090
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	Sch 2	Sch 5	✓				NJ696500
Otter	<i>Lutra lutra</i>	Sch 2	Sch5	✓				NJ7052 2020
Water vole	<i>Arvicola amphibius</i>	Sch 2	Sch 5	✓				NJ6954552118
Bird								
Barn Owl	<i>Tyto alba</i>		Sch 1					NJ700520
Bullfinch	<i>Pyrrhula pyrrhula</i>			✓		Amber		NJ69495244
Dunnock	<i>Prunella modularis</i>			✓		Amber		NJ69975078
House sparrow	<i>Passer domesticus</i>			✓		Red		NJ69495243

¹ Conservation of Habitats and Species Regulations 2017 (as amended)

² Wildlife and Countryside Act 1981 (as amended)

³ Species of Principal Importance within the relevant country of the United Kingdom

⁴ Birds of Conservation Concern 5: the status of all regularly occurring birds in the United Kingdom, Channel Islands and the Isle of Man (Stanbury et al., 2021)

Common Name	Scientific Name	CHSR Schedule 2 or 5	WCA Schedule 1, 5 or 8	National Priority Species	Local Priority/ BAP Species	Red Data Book/ BoCC	Other	Grid Ref.
Kingfisher	Alcedo atthis		Sch1					NJ700520
Osprey	Pandion haliaetus			✓		Amber		NJ6992651918
Reed bunting	Emberiza schoeniclus			✓		Amber		NJ70235297
Peregrine	Falco peregrinus		Sch 1		✓			NJ6993451912
Skylark	Alauda arvensis			✓		Red		NJ71165163
Song thrush	Turdus philomelos			✓		Amber		NJ69615242
Spotted flycatcher	Muscicapa striata			✓		Red		NJ6952152129
Starling	Sturnus vulgaris			✓		Red		NJ69315243
Tree Sparrow	Passer montanus			✓	✓			NJ6951
Yellowhammer	Emberiza citrinella			✓		Red		NJ70205364
Whooper Swan	Cygnus cygnus					Amber		NJ683518
Amphibian								
Common toad	Bufo bufo		Sch 5	✓				NJ70755208

2.3 Habitat Description and Condition Assessment

2.3.1 The following UKHab habitat types were identified on the site (secondary codes in brackets):

- g4 (14, 73, 89) Modified grassland (ruderal/ ephemeral, bare ground, permanent agricultural grassland);
- w1h (10, 11, 56, 73, 1010) 'Other' woodland, mixed (scattered scrub, scattered trees, young trees - plantation, bare ground, agricultural land);
- u1c (89, 1010) Artificial unvegetated unsealed surface (car park, agricultural land);
- u1e (73, 115) Built linear features (bare ground, track);
- h3 (1010) Native Hedgerow (agricultural land); and
- Individual Trees - Rural (Broadleaved).

2.3.2 The location of habitats within the site boundary is shown on Figure 2. These habitats are described below and details of their species abundance and habitat condition in Appendix 3 and 4.

g4 (14, 73, 89) Modified grassland (ruderal/ ephemeral, bare ground, permanent agricultural grassland)

2.3.3 The site features two large areas of modified grassland g4 (14, 73, 89), the dominant habitat on site (approximately 15.31ha) - see photograph 2 on Figure 3. The habitat is dominated by perennial ryegrass (*Lolium perenne*), abundant white clover (*Trifolium repens*), with frequent wavy hair-grass (*Deschampsia flexuosa*), cock's-foot (*Dactylis glomerata*), false oat grass (*Arrhenatherum elatius*), creeping buttercup (*Ranunculus repens*), broadleaved dock (*Rumex obtusifolius*) and common bent (*Agrostis capillaris*). This habitat also featured rare common knapweed (*Centaurea nigra*), herb Robert (*Geranium robertianum*) and common field-speedwell (*Veronica persica*). The grassland has low species diversity, with approximately 6 species per m². The habitat featured some patches of bare ground but was free of invasive species. Sward length was not varied and grass was short and well maintained.

2.3.4 Condition assessment concluded as Moderate condition, as the habitat failed condition criteria 2, 4 and 7.

w1g (10, 11, 56, 73, 1010) - Other woodland, mixed (scattered scrub, scattered trees, young trees - plantation, bare ground, agricultural land)

2.3.5 The modified grassland surrounding the chicken shed features a mosaic of mixed young woodland planted to provide shelter for the chickens (approximately 0.43ha). The 'Other' mixed woodland w1g (10, 17, 57) see photograph 1 on Figure 3 in the north of the survey area. This habitat is dominated alder (*Alnus glutinosa*), abundant Sitka spruce (*Picea sitchensis*), with frequent silver birch (*Betula pendula*), ash (*Fraxinus excelsior*), sessile oak (*Quercus petraea*),

occasional field maple (*Acer campestre*), hawthorn (*Crataegus monogyna*), holly (*Ilex aquifolium*) and white poplar (*Populus alba*).

2.3.6 The woodland patches are open, one age group is present throughout and the trees stand one storey tall, with 15-20% tree mortality due to wind damage. This habitat is classified as woodland rather than scrub as the trees are over 5 metres in height, following UKHab methodology (Butcher et al, 2020/2020a). The woodland patches are used as cover for chickens. The patches located throughout the site were all the same age with no recognisable NVC communities present.

2.3.7 The condition of the woodland is Poor, being scored down for having a low diversity of tree species, a lack of structural layers, and lacking natural tree regeneration. The woodland is immature and condition assessment achieved 19/39 = Poor.

u1c (115, 1010) Artificial unvegetated unsealed surface (track, agricultural land)

2.3.8 The habitat comprises a small margin around the chicken shed, totalling approximately 0.13ha_ of unsealed surface - see photograph 4 on Figure 3. The unsealed surface is currently in use as a crushed stone path, constructed from compacted crushed stone (type 1). The unsealed surface featured rare and sporadic scattered ephemeral species.

2.3.9 Additionally there is a small area of this habitat on the eastern boundary of the site (0.13ha), where the modified grassland had been dug up to form a stone tip. This is shown in P5 of figure 8.

2.3.10 This habitat does not require a condition assessment and is classified as N/A - Other.

u1e (73, 115) Built linear features (bare ground, track)

2.3.11 The site featured a bare earth track between the modified grassland fields in the north east of the site, totalling approximately 0.06ha. The linear feature is located at photograph 4 on Figure 3.

2.3.12 This habitat does not require a condition assessment and is classified as N/A - Other

H3 (1010) Native Hedgerow (agricultural land)

2.3.13 The site featured a species-poor intact hedgerow (approximately 0.33km in length), the hedge is located on the eastern boundary see Figure 2. The hedgerow had been recently pruned for the season and was 1.5m tall and wide, The hedgerow featured vertical gaps between the ground the vegetation with limited ground flora. The ground flora species were comprised of the g4 modified grassland species and featured wide margins without damage or disturbance. The habitat was dominated by blackthorn (*Prunus spinosa*), with frequent elder (*Sambucus nigra*), hornbeam (*Carpinus betulus*), bramble with occasional hawthorn and field maple. The linear feature is located at photograph 6 on Figure 3.

2.3.14 Condition assessment resulted in: A1 Pass, A2 Pass, B1 Pass, B2 Fail, C1 Pass, C2 Fail, D1 Pass D2 Fail = Moderate.

Urban - Urban Trees

2.3.15 The survey area featured several individual scattered trees, these have been recorded as individual trees as the areas of these groups did not meet the minimum mapping units (25m²) for UKHab surveys. The species composition was the same as with the woodland listed above in w1g.

2.3.16 The trees have been assessed using the Urban Tree Condition assessment. This habitat achieved Moderate condition failing condition criteria 2, 3, and 6.

3. Biodiversity Metrics

3.1 Baseline Biodiversity Metrics

Habitat units

- 3.1.1 The baseline habitats and areas recorded on site during the habitat survey are listed in Table 6. Multipliers have been applied for distinctiveness, condition and strategic significance, as described in Section 4. The total baseline habitat units for the site is 63.26, as shown on Table 6.
- 3.1.2 The proposed site changes, shown on Figure 4 and described in the BAP (Appendix 2) will result in 8 ha of modified grassland being enhanced to other neutral grassland, 0.13ha of artificial/unsealed surface converted into neutral grassland and 0.35 ha converted into new woodland planting (labelled in figure 4 as g4-1 and u1c-2). Consequently, the total habitat units lost is 1.40, as shown on Table 6.

Hedgerow units

- 3.1.3 The baseline habitat survey recorded a single hedgerow on site which has a hedgerow unit value of 1.32, as shown in Table 7.

Table 5: Habitat baseline, area retained and enhanced

Habitat Type	Area (ha)	Distinctiveness	Condition	Strategic Significance	Baseline (habitat units)	Area Retained	Area Enhanced	Units Retained	Units Enhanced	Area Lost	Units Lost
Modified grassland	2.72	2	2	1	10.88	0.00	2.37	0.00	9.40	0.35	1.38
Modified grassland	12.59	2	2	1	50.35	4.58	8.00	0.00	32.00	0.00	0.01
Artificial unvegetated, unsealed surface	0.09	0	0	1	0.00	0.09	0.00	0.00	0.00	0.00	0.00
Artificial unvegetated, unsealed surface	0.13	0	0	1	0.00	0.00	0.00	0.00	0.00	0.13	0.00
Artificial unvegetated, unsealed surface	0.03	0	0	1	0.00	0.03	0.00	0.00	0.00	0.00	0.00
Vacant/derelict land/ bare ground (built linear feature)	0.06	2	1	1	0.13	0.06	0.00	0.13	0.00	0.00	0.00
Other woodland; mixed	0.43	4	1	1	1.74	0.43	0.00	1.74	0.00	0.00	0.00
Urban Trees	0.02	4	2	1	0.16	0.02	0.00	0.00	0.00	0.00	0.00
Totals:	16.08				63.26			20.37	41.50	0.48	1.40

Table 7: Hedgerow baseline

Hedgerow Type	Length (km)	Distinctiveness	Condition	Baseline (habitat units)	Length Retained	Length Enhanced	Units Retained	Units Enhanced	Length Lost	Units Lost
Native Hedgerow	0.33	4	2	1.32	0.33	0	1.32	0	0.00	0.00
Totals:	0.33			1.32					0.00	0.00

3.2 Habitat Retention, Creation and Enhancement

Habitat creation and enhancement

3.2.1 The following measures for habitat creation and enhancement are proposed (see Figure 4 and Tables 8, 9 and 10)

- 4.58ha of modified grassland will be retained, this area is within the chicken scratching zone;
- 10.37ha of modified grassland will be enhanced to other neutral grassland of 'moderate' condition;
- 0.12ha of artificial unvegetated/unsealed surface will be retained;
- 0.33km of native hedgerow will be retained;
- 0.06ha built linear features (classified as Vacant/derelict land/ bare ground in the metric) will be retained;
- 0.02 of urban trees will be retained;
- 0.37ha of other woodland, broadleaved will be created and is assumed to be of 'Moderate' condition;
- 0.13ha of other neutral grassland will be created and will aim to reach 'moderate' condition; and
- 0.21km of native species rich hedgerow will be created and is assumed to be of 'moderate' condition.

3.2.2 Details of how the newly created and enhanced habitats and hedges will reach their target habitat and condition is detailed in Appendix 2: Biodiversity Action Plan for

3.2.3 The proposed habitat types and areas to be created and enhanced (Figure 4) are listed in Table 8, 9 and 10. Multipliers have been applied for distinctiveness, condition, strategic significance, time to target and difficulty, as described in Section 4.

3.2.4 If these habitats are created/enhanced as predicted, the total habitat units that would be delivered is 93.60 and the total hedgerow units that will be created is 1.41.

Table 8: Habitat creation

Habitat Type	Area (ha)	Distinctiveness	Condition	Strategic Significance	Time to Target	Time to Target Multiplier	Difficulty Multiplier	Habitat Units Delivered
Other neutral grassland	0.13	4	2	1	5	0.84	1.00	0.89
Other woodland, broadleaved	0.35	4	2	1	15	0.59	1.00	1.78
Totals:	0.48							2.68

Table 9: Habitat enhancement

Habitat Type	Area (ha)	Distinctiveness	Condition	Strategic Significance	Time to Target	Time to Target Multiplier	Difficulty Multiplier	Habitat Units Delivered
Other neutral grassland	2.72	4	2	1	10	0.70	1.00	16.14
Other neutral grassland	8.00	4	2	1	10	0.70	1.00	54.41
Totals:	10.37							70.55

Table 10:- Hedgerow creation

Habitat Type	Area (km)	Distinctiveness	Condition	Strategic Significance	Time to Target	Time to Target Multiplier	Difficulty Multiplier	Habitat Units Delivered
Native Species Rich Hedgerow	0.21	4	2	1	5	0.84	1	1.41
Totals:	0.21							1.41

3.3 Biodiversity Net Gain

- 3.3.1 The BNG estimation associated with the implementation of the BAP at is shown on Table 11.

Habitat units

The baseline habitat unit value is 63.26 units. With the proposed habitat management suggestions in the BAP, the proposed post- intervention habitat units is predicted to be 93.60.

This would result in a gain of 30.34 habitat units, or a 47.96% biodiversity net gain in habitat units.

Hedgerow units

- 3.3.2 The baseline hedgerow unit value is 1.32 units. With the proposed habitat management suggestions in the BAP, the proposed post- intervention hedgerow units is predicted to be 2.73.
- 3.3.3 This would result in a gain of 1.41 hedgerow units, or a 106.51% biodiversity net gain in habitat units..

Table 11: - Biodiversity net change

On-site baseline	Habitat units	63.26
	Hedgerow units	1.32
	River units	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	93.60
	Hedgerow units	2.73
	River units	0.00
On-site net % change (Including habitat retention, creation & enhancement)	Habitat units	47.96%
	Hedgerow units	106.51%
	River units	0.00%

4. Conclusion

- 4.1.1 Thomson Environmental Consultants has assessed the BNG enhancement options at Farm. The post-intervention Biodiversity Action Plan provided would achieve a 47.96% biodiversity net gain of habitat units and 106.51% net gain for hedgerow units.

5. References

APG Aberdeen Planning guidance (2023) Natural heritage (Draft)

Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020) The UK Habitat Classification User Manual Version 1.1 at <https://ukhab.org/>.

Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020a) UK Habitat Classification - Habitat Definitions V1.1 at <https://ukhab.org/>.

CIEEM (2017) Guidelines for Preliminary Ecological Appraisal. 2nd Edition. Chartered Institute of Ecology and Environmental Management, Winchester, England.

CIEEM (2021) Biodiversity Net Gain in Scotland: Briefing Note for Local Planning Authorities. Chartered Institute of Ecology and Environmental Management, Winchester, England.

Duncan Farms (2022) Range Management Plan. Duncan Farms.

Institute of Environmental Assessment (1995) Guidelines for Baseline Ecological Assessment. E & FN Spon, London, England.

Panks, S., White, N., Newsome, A., Nash, M., Potter, J., Heydon, M., Mayhew, E., Alvarez, M., Russell, T., Cashon, C., Goddard, F., Scott, S. J., Heaven, M., Scott, S. H., Treweek, J., Butcher, B., Stone, D. (2022) Biodiversity metric 3.1: Auditing and accounting for biodiversity - Metric 3.1 Calculation Tool. Natural England

Panks, S., White, N., Newsome, A., Nash, M., Potter, J., Heydon, M., Mayhew, E., Alvarez, M., Russell, T., Cashon, C., Goddard, F., Scott, S. J., Heaven, M., Scott, S. H., Treweek, J., Butcher, B., Stone, D. (2022a) Biodiversity metric 3.1: Auditing and accounting for biodiversity - User Guide. Natural England.

Panks, S., White, N., Newsome, A., Nash, M., Potter, J., Heydon, M., Mayhew, E., Alvarez, M., Russell, T., Cashon, C., Goddard, F., Scott, S. J., Heaven, M., Scott, S. H., Treweek, J., Butcher, B., Stone, D. (2022b) Biodiversity metric 3.1: Auditing and accounting for biodiversity - Technical Supplement. Natural England.

Panks, S., White, N., Newsome, A., Nash, M., Potter, J., Heydon, M., Mayhew, E., Alvarez, M., Russell, T., Cashon, C., Goddard, F., Scott, S. J., Heaven, M., Scott, S. H., Treweek, J., Butcher, B., Stone, D. (2022c) Biodiversity metric 3.1: Auditing and accounting for biodiversity - Habitat Condition Assessment Sheets with Instructions. Natural England.

Stace, C. (2019) New Flora of the British Isles (fourth edition). C&M Floristics, Middlewood Green, Suffolk.

Appendix 1: Planning Policy Considerations

Overview

This section provides an overview of policy and strategies relevant to the production and implementation of this strategy.

The majority of local planning authorities will have their own biodiversity and environmental strategies which will detail priority species and habitats and those which require protection and enhancement.

In the case of this report the policy and strategy is largely complimentary rather than a requirement, as the BNG opportunities are additional improvements and not being used for biodiversity offsetting like on a residential scheme.

National Planning Policy

The following policies and legislation provide 'hooks' through which BNG can be targeted in Scotland (CIEEM, 2021):

Nature Conservation (Scotland) Act 2004: 'It is the duty of every public body and office-holder, in exercising any functions, to further the conservation of biodiversity so far as is consistent with the proper exercise of those functions.'

'Scottish Biodiversity Strategy: Scotland's Biodiversity - It's in Your Hands (2004) and 2020 Challenge for Scotland's Biodiversity (2013): 'to conserve biodiversity for the health, enjoyment and wellbeing of the people of Scotland, now and in the future.'

Scottish Planning Policy (SPP: 2014): 'The planning system should... seek benefits for biodiversity from new development where possible, including the restoration of degraded habitats and the avoidance of further fragmentation or isolation of habitats'.

Planning (Scotland) Act 2019: Sets six key outcomes from the National Planning Framework, one of which is 'securing positive effects for biodiversity'. When National Planning Framework 4 is published this will be the main national policy through which all six outcomes required by the 2019 Act will be achieved.

Scotland has signed up to the United Nations Sustainable Development Goals, with goal 15 relating to halting biodiversity loss. Edinburgh Declaration on post-2020 global biodiversity framework (2020): Sets out the concerns and aspirations of the Scottish Government and its partners in delivering for nature over the next decade.

Scottish biodiversity strategy post-2020: statement of intent (2020): Sets out current position and direction of the Scottish Government, in cognisance of the delay to the proceedings for the next convention on biological diversity as a result of COVID-19, for a post-2020 biodiversity framework.

Local Policy

Aberdeen Planning Guidance 2023: Natural Heritage (DRAFT) states that the following in regards to BNG (APG, 2023):

In line with LDP policy NE3 (Our Natural Heritage), all development proposals should make provision to achieve an overall biodiversity gain on their site. Every development, including at small scale, will have scope for some kind of enhancement for biodiversity. The most effective way to do this is to start with careful planning and layout of the development in order to protect existing natural heritage assets on site. Added value i.e. 'net gain' can then be added to the site. Enhancements will be highly dependent on the site and scale of development, but some examples are; careful landscaping (see section below on 'Landscape and Biodiversity within Developments'); multi-functional SUDS; creating green walls and roofs; tree planting; bat and bird boxes; holes in or gaps under fencing for small mammals; and habitat linkages. A competent ecological consultant will be able to suggest suitable enhancements based on the context of the site, so engaging an ecologist early on in a project is likely to save time and money.

Some of the suggestions for mitigation and compensation can also be used to add 'net gain', however mitigation is not considered net gain unless it goes above and beyond what is necessary to compensate the loss which has prompted the mitigation requirement.

It should be noted that Aberdeen City Council will not accept the deliberate clearing of sites as a pre-emptive step to the planning application process. Where there is evidence that valuable natural habitats, trees or woodlands have been deliberately cleared prior to submission of a planning application, the Council's position will be to view the site as if this had not taken place. Where there is neglect or damage to such habitats and their species, their deteriorated condition will not be taken into consideration and the original ecological potential of the site will be used as the basis for assessing the acceptability of any proposals for enhancement and overall biodiversity gain.

Appendix 2: Biodiversity Action Plan for

5.1 The Brief and Objectives

5.1.1 This appendix provides a Biodiversity Action Plan for which includes:

- An annotated map of the site showing where measures can be carried out (Figure 4)
- Quantification of numbers relating to areas of habitat creation;
- An indication of the percentage net gain achieved by the measures (BNG metric); and
- Some general habitat creation/management prescription guidelines to maintain the standard.

5.2 Background Information

5.2.1 is located within geological areas of mineral podzols (Scotland Soils, 2023), a soil type widespread in the northeast of Scotland. The soil is generally associated with acid parent material and semi-natural heath or coarse grassland and coniferous woodland. They are characteristic of any topographic position where aerobic conditions prevail, and water can percolate freely through the upper part of the profile.

5.2.2 As the site has been managed for agricultural purposes since at least the 1980s (historical mapping has been accessed on Google Earth, 2023), it is likely that the soil acidity has been reduced and fertilisation was at some point frequent. The grassland species present are reflective of a common agricultural seed mix, with some neutral/acidic species present including red fescue (*Festuca rubra*). This suggests that a neutral grassland mix would be appropriate for re-seeding.

5.2.3 The pre-intervention habitat map is shown on Figure 2, with post intervention habitat retention, enhancement and creation measures shown on Figure 4.

5.3 Habitat Retention, Enhancement and Creation

Retention - Grasslands - Modified Grasslands (Number 1 in Fig 4)

5.3.1 is currently dominated by modified grassland, in the form of species poor agricultural grassland. An area of 140m around each chicken shed will be retained to allow the chicken to continue to roam and forage in this area and maintain the current land use. 4.58 hectares (ha) of this habitat will be retained at.

Scrub /woodland (Number 1 in Fig 4)

5.3.2 currently features young tree planting near the chicken sheds at different stages of maturity. The habitat at was young to semi-mature and classified as (w1h - 'Other' woodland, mixed). The planting at will eventually mature to w1h habitat. These two habitats will be retained without enhancement. 0.43 ha of this habitat will be retained at.

Native Hedgerow (number 2 in Fig 4)

5.3.3 features a length (0.33km) of native hedgerow on the south-eastern boundary of the site, the hedgerow is mature, species-poor, intact and assessed as being of 'Moderate' condition. Although the hedge was assessed as being species poor, it was established and the replanting of additional species may create a gaps in the hedgerow. The hedgerow at will be retained without enhancement.

Enhancement - 'Other' Neutral Grasslands (Number 4 in Fig 4)

5.3.4 Both sites will have the majority of the modified grassland enhanced into 'Other' neutral grassland. This type of grassland should support at least 9 species per m².

5.3.5 Grass seed mix should be composed of at least 20% native wildflowers and 80% slow growing grasses, which can be used as a food source by invertebrates.

5.3.6 A suitable grass seed mix is EM2: Standard General Purpose Meadow Mixture (Emorsgate, 2023). This meadow mixture contains species that are characteristic of traditional meadows across a wide range of soil types, which can be used as a food source by invertebrates. Seed mixes are available with a higher percentage of wildflowers. Endeavour to select ground that is not highly fertile and does not have a problem with perennial weeds. Good preparation is essential to success so aim to control weeds and produce a good quality seed bed before sowing.

5.3.7 EM2 is a complete mix composed of 15% native wild flowers and 85% slow growing grasses (by weight). The flower and grass components are also available to order separately as EM2F for the flower component and EG1 for the grass component. The recommended sowing rate is 40kg/ha.

5.3.8 EM2 seed mix composition is as follows:

5.3.9 Wild flowers - 15%

- 0.9 Achillea millefolium - Yarrow
- 0.9 Centurea nigra - Common Knapweed
- 0.15 Cruciata laevipes - Crosswort
- 0.45 Daucus carota - Wild Carrot
- 0.3 Knautia arvensis - Field Scabious
- 0.75 Leucanthemum vulgare - Oxeye Daisy
- 2.1 Malva moschata - Musk Mallow
- 0.12 Medicago lupulina - Black Medick
- 3.0 Plantago lanceolata - Ribwort Plantain
- 2.25 Poterium sanguisorba ssp sanguisorba - Salad Burnet
- 0.12 Primula veris - Cowslip
- 0.54 Ranunculus acris - Meadow Buttercup
- 1.05 Rhinanthus minor - Yellow Rattle
- 2.25 Silene dioica - Red Campion
- 0.12 Silene vulgaris - Bladder Campion

5.3.10 Grasses - 85%

8.50 *Agrostis capillaris* - Common Bent
 29.75 *Cynosurus cristatus* - Crested Dogstail
 25.50 *Festuca rubra* - Red Fescue
 4.25 *Phleum bertolonii* - Smaller Cat's-tail
 17.00 *Poa pratensis* - Smooth-stalked Meadow-grass

5.3.11 The ground should be prepared by removing all the vegetation and scraping back a layer of topsoil a couple of times to ensure all roots are removed. Topsoil should not be highly fertile and should be raked or harrowed to a medium tilth, then rolled prior to sowing. Seed sowing should take place over springtime, or if this is not an option then it should be done between September and October. Immediately after sowing the area should be treaded or rolled, and then watered. Regular watering should continue until the wildflowers and grasses are establishing. To get an even distribution and avoid running out divide the seed into two or more parts and sow in overlapping sections. Do not incorporate or cover the seed, but firm in with a roll, or by treading, to give good soil/seed contact.

5.3.12 Alternatively, grassland and wildflower turf can be bought, though usually this is more expensive.

5.3.13 For the grassland to be classed as in a Moderate condition it should achieve at least 4 of the 7 criteria listed below, including 1 and 6 (moderate requires 4 criteria). The grassland will aim to achieve the following criteria shown in Table 1:

5.3.14 Table 1: Condition assessment targets for grassland

Condition Assessment Criteria		Pass/Fail
1	The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward. NB - This criterion is essential for achieving moderate condition for non-acid grassland types only.	Pass
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Fail
3	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Pass
4	Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	Pass
5	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of species indicative of sub-optimal condition ⁵ and	Fail

	physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.	
6	There are greater than 9 species per metre squared. NB - This criterion is essential for achieving good condition (non-acid grassland types only).	Pass
Notes		
Footnote 1 - Species indicative of sub-optimal condition for this habitat type include: Creeping thistle <i>Cirsium arvense</i> , spear thistle <i>Cirsium vulgare</i> , curled dock <i>Rumex crispus</i> , broad-leaved dock <i>Rumex obtusifolius</i> , common nettle <i>Urtica dioica</i> , creeping buttercup <i>Ranunculus repens</i> , greater plantain <i>Plantago major</i> , white clover <i>Trifolium repens</i> , cow parsley <i>Anthriscus sylvestris</i> .		

Creation - Woodland planting (Number 5 in Fig 4)

5.3.15 Both feature planting of young trees, with Farm featuring small pockets of young whips.

5.3.16 To further enhance the tree cover on the site, we recommend new woodland planting in select areas across the sites. An additional of 0.35ha of native tree/scrub species that complement the nearby woodland habitat would provide suitable foraging/nesting opportunities for fauna. This would be entered into the metric as an area of woodland (w1g - Other woodland, broadleaved) and would act as a woodland edge/buffer/wildlife corridor.

5.3.17 Ideally tree species should be native and benefit biodiversity by offering a food source, such as flowers/pollen for invertebrates. Additionally, trees which mature quickly, but stay a relatively manageable size, and create features such as deadwood, cavities and loose bark which are suitable for invertebrates and roosting bats also offer extra biodiversity value.

5.3.18 For the woodland to be classed as Moderate condition it must achieve 26 points out of 39 on the assessment after 15 years until target time. This is based on the following criteria with a score of 1-3 points for each criteria and the woodland to aim to achieve the following criteria:

Table 2: Condition assessment targets for woodland creation

Condition Assessment Criteria		Score
1	Age distribution of trees ¹	2
2	Wild, domestic and feral herbivore damage	3
3	Invasive plant species ³	2
4	Number of native tree species	3
5	Cover of native tree and shrub species	3
6	Open space within woodland ⁴	1

7	Woodland regeneration ⁵	1
8	Tree health	3
9	Vegetation and ground flora	2
10	Woodland vertical structure ⁶	2
11	Veteran trees ⁷	1
12	Amount of deadwood	2
13	Woodland disturbance ⁸	2
Total Score (out of a possible 39)		27
Condition Assessment Result		Condition Assessment Score
Total Score of 23 to 34		Poor (1)
Notes		
<p>Footnote 1 - See EWBG method INDICATOR 1 for more information. If tree species is not a birch, cherry or Sorbus: 0 - 20 years (Young); 21 - 150 years (Intermediate); and >150 years (Old). A recognisable age class should be a consistent recognisable layer across the woodland or stand being assessed. Presence of a few saplings would not indicate that the woodland has an 'age class' of young trees.</p> <p>Footnote 2 - See EWBG method INDICATOR 2 for more information. Browsing pressure is considered to be significant where >20% of vegetation visible within each survey plot shows damage from any type of browsing pressure listed.</p> <p>Footnote 3 - See EWBG method INDICATOR 3 for more information. Check for presence of the following invasive non-native species: American skunk cabbage <i>Lysichiton americanus</i>; Himalayan balsam <i>Impatiens glandulifera</i>; Japanese knotweed <i>Fallopia japonica</i>; Cherry Laurel <i>Prunus laurocerasus</i>; Shalloon <i>Gaultheria shallon</i>; Snowberry <i>Symphoricarpos albus</i>; Variegated yellow archangel <i>Lamiastrum galeobdolon</i> subsp. <i>argentatum</i>; and Rhododendron <i>Rhododendron ponticum</i>.</p> <p>Footnote 4 - See EWBG method INDICATOR 6 for more information. Open space within woodland in this context is temporary open space in which trees can be expected to regenerate (e.g. glades, rides, footpaths, areas of clear-fell). This differs from permanent open space where tree regeneration is not possible or desirable (e.g. tarmac, buildings, rivers). Area is at least 10m wide with less than 20% covered by shrubs or trees.</p> <p>Footnote 5 - See EWBG method INDICATOR 8 for more information. This indicator measures regeneration potential of the woodland by considering three classes: seedlings; saplings; and young trees of 4-7 cm DBH. All three classes would fall in the 'young' category of the 'age distribution of trees' indicator, the regeneration indicator is gathers additional information by considering regeneration potential i.e. if seedlings, saplings and young trees are all present that means natural regeneration processes are happening.</p> <p>Footnote 6 - This indicator is looking at structural diversity and is useful to understand in conjunction with the age of trees in a woodland. Vertical structure is defined as the number of canopy storeys present. Possible storey values are: 1) Upper; 2) Complex: recorded when the stand is composed of multiple tree heights that cannot easily be stratified into broad height bands (such as upper, middle or lower); 3) Middle; 4) Lower; and 5) Shrub layer.</p> <p>Footnote 7- See EWBG method INDICATOR 12 for more information. All ancient trees are veteran trees, but not all veteran trees are ancient. A veteran tree may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value. Veteran trees can be classified if they have four out of the five following features:</p> <ol style="list-style-type: none"> 1. Rot sites associated with wounds which are decaying >400 cm²; 2. Holes and water pockets in the trunk and mature crown >5 cm diameter; 3. Dead branches or stems >15 cm diameter; 4. Any hollowing in the trunk or major limbs; 5. Fruit bodies of fungi known to cause wood decay. 		

Footnote 8 - See EWBG method INDICATOR 15 for more information. Examples of disturbance are: significant nutrient enrichment; soil compaction from trampling, machinery or animal poaching; litter."

Woodland trees

5.3.19 Native flowering trees which benefit pollinators are recommended to be planted, such as:

- Goat willow (*Salix caprea*)
- Rowan (*Sorbus aucuparia*)
- Alder (*Albus glutinosa*)
- Hazel (*Corylus avellana*)
- Crab apple (*Malus sylvestris*)
- Pear tree (*Pyrus communis*)
- Wild cherry (*Prunus avium*)
- Damson (*Prunus domestica* subsp. *Insititia*)

5.3.20 All planting on site should be native species preferably of local provenance where practicable. Any trees or shrubs should preferably have been seeded and grown in the UK.

Hedgerow (Number 6 in Fig 4)

5.3.21 featured a 0.33km section of native hedgerow, as this hedgerow is established and semi mature. It is recommended that the existing hedgerow is complimented with additional nearby planting.

5.3.22 The following species should be included in this planting (APG, 2023):

Hawthorn
Hazel
Holly (*Ilex aquifolium*)
Crab apple
Blackthorn
Raspberry
Elder (*Sambucus nigra*)
Guelder rose (*Viburnum opulus*)

5.3.23 Aim to use a mixture of at least 5 native species, e.g., 60% Hawthorn, 10% Blackthorn, 10% Hazel, 5% Holly, 5% Guelder Rose, 5% Dog Rose, 5% Elder. Use locally sourced native species wherever possible. To be classed as being of Moderate condition the species must aim for "No more than 4 failures in total; and Does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & C2 = Moderate condition)." The created hedgerow is to aim to achieve the following criteria:

Table 3: Condition assessment targets for hedgerow creation

Condition Assessment Criteria		
A1 - Height	>1.5 m average along length	<p>"The average height of woody growth estimated from base of stem to the top of shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees.</p> <p>Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).</p> <p>A newly planted hedgerow does not pass this criterion (unless it is > 1.5 m height)."</p>
A2 - Width	>1.5 m average along length	<p>"The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees.</p> <p>Outgrowths (e.g. blackthorn suckers) are only included in the width estimate when they >0.5 m in height.</p> <p>Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice)."</p>
B1 - Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees')	<p>"This is the vertical gappiness of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth.</p> <p>Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook)."</p>
B2 - Gap - hedge canopy continuity	Gaps make up <10% of total length and	<p>"This is the horizontal gappiness of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small).</p> <p>Access points and gates contribute to the overall gappiness, but are not subject to the >5 m criterion (as this is the typical size of a gate)."</p>
C1 - Undisturbed ground and perennial vegetation	No canopy gaps >5 m"	<p>"This is the level of disturbance (excluding wildlife disturbance) at the base of the hedge.</p> <p>Undisturbed ground should be present for at least 90% of the hedgerow length, greater than 1m in width and must be present along at least one side of the hedge.</p>

		This criterion recognises the value of the hedge base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches."
C2 - Undesirable perennial vegetation	">1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length:	The indicator species used are nettles (<i>Urtica</i> spp.), cleavers (<i>Galium aparine</i>) and docks (<i>Rumex</i> spp.). Their presence, either singly or together, should not exceed the 20% cover threshold.
D2 - Invasive and neophyte species	- measured from outer edge of hedgerow, and	Neophytes are plants that have naturalised in the UK since AD 1500. For information on neophytes see the JNCC website and for information on invasive non-native species see the GB Non-Native Secretariat website.
D2 - Current damage	- is present on one side of the hedge (at least)"	"This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g. excessive hedge cutting)."
Condition Assessment Result		
"No more than 4 failures in total; AND Does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & C2 = Moderate condition)."		Moderate 2

5.4 Management and Maintenance

Grassland

5.4.1 First year management - Most of the sown meadow species are perennial and are slow to establish. Soon after sowing there will be a flush of annual weeds, arising from the soil seed bank. These weeds can look unsightly, but they will offer shelter to the sown seedlings, are great for bugs, and they will die before the year is out. So resist cutting the annual weeds until mid to late summer, especially as the mixture contains Yellow Rattle. Then cut, remove and compost. Early August is a good time. This will reveal the young meadow, which can then be kept short by grazing or mowing through to the end of March of the following year. Dig out any residual perennial weeds such as docks.

5.4.2 Management Once Established - In the second and subsequent years EM2 sowings can be managed in a number of ways which, in association with soil fertility, will determine the character of the grassland. The best results are usually obtained by traditional meadow management based around a main summer hay cut in combination with autumn and possibly spring mowing or grazing.

5.4.3 Meadow grassland is not cut or grazed from spring through to late July/August to give the sown species an opportunity to flower. After flowering in July or August take a 'hay cut': cut back with a scythe, petrol strimmer or tractor mower to c 50mm. Leave the 'hay' to dry and shed seed for 1-7 days then remove from site.

5.4.4 Mow or graze the re-growth through to late autumn/winter to c 50mm and again in spring if needed.

Woodland planting

5.4.5 The main aims of young woodland planting maintenance are (see Woodland Trust, 2023):

- Controlling weeds
- Protecting against wildlife damage
- Replacing losses

5.4.6 0-5 years Management - Weeding is the priority for 5 years after planting. Focus on this until all the trees have grown above the height of competing weeds and started to shade out ground vegetation.

5.4.7 Check trees throughout winter, particularly after wet and windy spells and straighten tree guards and replace any broken stakes. In summer, make sure weeds are not growing inside tree tubes. Carefully lift the tube at the base by releasing the cable ties securing the tube to the stake and pull up any weeds.

5.4.8 Look out for damage by small mammals. If your trees don't seem to be growing in spring, check the base for signs of gnawing. Animals like voles rely on long grass, so mowing between trees and good weed control helps limit damage.

5.4.9 5-10 years - Begin your coppice rotation. You won't be able to harvest useable material in the early years but the first cut will result in multi-stemmed coppice stools forming which will become hugely productive. The cut branches will grow quickly as roots will now be well-established. Watch out for deer and rabbit damage on regrowth in spring.

5.4.10 10 years and onwards - The trees will now be growing above their tubes, these should be removed. A Stanley knife with a hooked carpet fitter's blade is the best tool for opening tubes without damaging the trees. Remove the tubes in the summer to allow the bark to toughen while animals like rabbits have plenty of grass to eat. Most tubes are recyclable so make arrangements to recycle them. Trees will be tall enough to consider pollarding.

Hedgerow

5.4.11 To maximise the value of a mixed native hedge for wildlife, only trim every 2nd or 3rd year to encourage flowers, berries, and nuts. Hedges planted 3m back from a boundary or path may require very little pruning. To avoid harming nesting birds and disturbing other wildlife, the trimming of hedges should never be undertaken between the end of March and the end of August. The best time to prune hedges is between January and February.

5.4.12 The hedgerow planting should take place between November and March. The planting should be two staggered rows 30cm apart. Between four and six plants per metre should be planted. Minor species can be planted in small single species groups or randomly within larger blocks of hawthorn.

5.4.13 A suitably qualified contractor should be used for all landscaping requirements.

5.4.14 Hedgerows should only be cut once shrubs and trees are dominant and maintenance should only be conducted every two to three years to allow them to develop. Where practicable, alternate sides of the hedgerows will be cut in alternate years. Hedgerows should only be cut once leaves start to drop in autumn and over winter and no cutting should take place once new leaves start to grow. No cutting should take place during the breeding bird season (March - September).

5.4.15 To improve the structure of the hedges and increase the amount of berries available for wildlife:

- Cut in increments, by increasing the height and width of each cut by at least 10cm;
- Cut every other year, or better still one year in 3;
- Leave any hedge trimming until late winter, to allow birds to feed on berries over the winter;
- All hedgerows should not be cut in the same year.

5.4.16 Undesirable perennial vegetation associated with nutrient enriched soils, such as nettles (*Urtica* spp.), cleavers (*Galium aparine*) and docks (*Rumex* spp.) should be controlled so they don't exceed 20% cover.

5.4.17 Where practicable, removal of deadwood should be avoided (with the exception of removal on the grounds of public health and safety), however any removed standing deadwood should be retained in discrete piles throughout the site to provide shelter opportunities for wildlife.

5.5 Wildlife Enhancements

5.5.1 The wildlife enhancements recommended below are not included in the Biodiversity Metric 3.1 calculations. The Biodiversity Metric 3.1 calculator only takes into account habitats. However, these enhancements all benefit wildlife and are easy to implement, often at a minimal cost.

5.5.2 The desk study of both confirmed the presence of numerous protected and notable species, these are detailed in table 3 of the main report. The confirmation of badger, bat and bird records in the nearby vicinity has informed the following enhancements.

Invertebrates

5.5.3 Bug hotels can be easily built (See RSPB - Build a Bug Hotel). Recycled material such as rocks, bricks, rubble and pallets could be used. Material should be piled high, and partially filled with substrate, then affixed down, using roofing felt or wire mesh, to support the structure and prevent members of the public from disturbing it.

5.5.4 Log piles, sheltered by foliage, can act as hibernacula for any amphibians or hedgehog that may use the site. They will also be used by invertebrates. The log piles should be 1m x 1m and to prevent the logs being removed by members of the public they should be fastened down with wiring.

5.5.5 Bee bricks can be incorporated into buildings, or if this is not possible, they can be placed in suitable locations across the site. Bee Bricks should be placed in a warm sunny spot on a south-facing wall at a minimum height of 1m, with no vegetation obstructing the holes. It is highly recommended that bee-friendly plants should be located nearby so that the bees using the bricks have food, otherwise it is unlikely that the brick will be used.

5.5.6 Bee boxes, such as Greenwood Eco Habitat Solitary Bee Boxes, are visually appealing and can be added to wildflower areas, that may sometimes look unkempt and overgrown, to indicate that the habitat supports bees. General recommendations for the positioning of bee nest boxes are given as follows:

- Boxes should be sited to provide shelter from wind, rain and strong sunlight, with an orientation from south to southeast;
- Boxes can be near vegetation, but their entrances should not be obscured or shaded;
- Boxes should be positioned at least 1m above ground level;
- Boxes should be installed in a stable, fixed position that will not sway in the wind or be easily knocked or dislodged. If secured to a tree, strapping should be used to avoid damage to the tree;
- Boxes should be placed in areas where disturbance is likely to be minimal, i.e. away from public footpaths, and not too close to bird feeders or other boxes (apart from bee boxes designed for colonial species); and
- Boxes are best put up between August and February as most birds will not be nesting at this time.

Terrestrial Mammals - Red Squirrels

5.5.7 Red Squirrel nest box nesting boxes can be installed for red squirrels, which grey squirrels may also occupy. In the UK, red squirrels have declined massively in recent decades due to the loss of suitable coniferous woodland habitats and the introduction of the American grey squirrel, which out-competes the red squirrel for food.

5.5.8 This nest box has a host of features that ensure that the occupants are safe from predators such as pine martens:

- Deep nest box.
- Two entrance/exit holes - one on the front centre and one on the side.
- Internal and external ladder features enable young to climb the slippery sides of the box.
- Perching ledge that needs to fit on the box on receipt.
- The pitched roof which sheds rain away from the nest box
- Removal of front panel to allow box cleaning
- Slow-seasoned untreated FSC certified timber is used to negate the need to use any chemicals preservatives which may deter sensitive mammals from using the nest box.

5.5.9 Wooden Drey for Red Squirrels should be sited high in mature woodland between 3m and 4m using the backplate mount. Face the box away from both direct sunlight and the prevailing weather. The boxes can be filled to half full with dehydrated nesting material such as leaves, straw or hay.

5.5.10 Breeding red squirrels are protected under the Wildlife & Countryside Act, so a licensed worker may only inspect an occupied nest box

References

APG Aberdeen Planning guidance (2023) Natural heritage (Draft) Aberdeen City Council.

Emorsgate Seeds (Accessed 2023) Available

at: <https://wildseed.co.uk/product/mixtures/complete-mixtures/general-purpose-meadow-mixtures/standard-general-purpose-meadow-mixture/>

Google Earth (Accessed 2023) Version 9.186.0.0. Available at:

<https://earth.google.com/web/@57.56508264,-2.4965152,35.28317008a,5570.8669132d,35y,4.26668881h,0.20302854t,0r>

RSPB 'How to build a bug hotel' [Build a bug hotel | The RSPB](#)

Scotland Soils (Accessed 2023) Available at: https://map.environment.gov.scot/Soil_maps/?layer=1

Woodland Trust (Accessed 2023) 'Managing your woodland' Available at:

<https://www.woodlandtrust.org.uk/plant-trees/managing-trees-and-woods/managing-your-woodland/>

Appendix 3: Plant Species and Abundance

g4-1 Modified grassland

Common Name	Scientific Name	Abundance
Perennial rye grass	<i>Lolium perenne</i>	D
Wavy hairgrass	<i>Deschampsia flexuosa</i>	A
False oat-grass	<i>Arrhenatherum elatius</i>	A
Red fescue	<i>Festuca rubra</i>	A
Common nettle	<i>Urtica dioica</i>	A
White clover	<i>Trifolium repens</i>	A
Broad leaved dock	<i>Rumex obtusifolius</i>	O
Cocksfoot	<i>Dactylis glomerata</i>	O
Herb Robert	<i>Geranium robertianum</i>	R
Common field-speedwell	<i>Veronica persica</i>	R

w1g-1 Other broadleaved woodland

Common Name	Scientific Name	Abundance
Alder	<i>Alnus glutinosa</i>	D
Ash	<i>Fraxinus excelsior</i>	A
Elder	<i>Sambucus nigra</i>	A
Sitka Spruce	<i>Picea sitchensis</i>	A
Silver Birch	<i>Betula pendula</i>	F
White poplar	<i>Populus alba</i>	A
Hawthorn	<i>Crataegus monogyna</i>	O
Sessile oak	<i>Quercus petraea</i>	O
Field maple	<i>Acer campestre</i>	O
Red dead-nettle	<i>Lamium purpureum</i>	O
Bramble	<i>Rubus fruticosus</i> agg.	O
Nettle	<i>Urtica dioica</i>	O
Holly	<i>Ilex aquifolium</i>	O

Appendix 4: Habitat Condition Assessment

Condition Sheets: GRASSLAND Habitat Type
- g4-1

Condition Assessment Criteria		Pas s / Fail
1	"There must be 6-8 species per m2. Note - if a grassland has 9 or more species per m2 it should be classified as a moderate distinctiveness grassland habitat type.	Pas s
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Fail
3	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Pas s
4	Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.	Fail
5	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Pas s
6	Cover of bracken less than 20%.	Pas s
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species ¹ make up less than 5% of ground cover.	Fail
Condition Assessment Result		Condition Assessment Score
Passes 4 or 5 of 7 criteria including passing essential criterion 1		Moderate (2)
Notes		

Examples are early and late flowering species of Prunus and aphids on varieties of Acer providing food for species higher up the food chain. The species of trees (native or non-native) together with the intensity and type of management they are subject to will determine the biodiversity value of the trees in question. Trees in urban areas provide opportunistic sites for biodiversity to colonise and re-colonise, increasing connectivity and contributing to biodiversity critical mass between already established patches or sites. This is especially so where transport corridors are populated with mixed native species

Footnote 2 - A mature tree in this context is one that is at least 2/3 expected fully mature height for the species.

Footnote 3 - All ancient trees are veteran trees, but not all veteran trees are ancient. A veteran tree may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value. Veteran trees can be classified if they have four out of the five following features:

1. Rot sites associated with wounds which are decaying >400cm²;
2. Holes and water pockets in the trunk and mature crown >5 cm diameter;
3. Dead branches or stems >15 cm diameter;
4. Any hollowing in the trunk or major limbs;
5. Fruit bodies of fungi known to cause wood decay."

Condition Sheet: WOODLAND Habitat Type - w1f7-1

Condition Assessment Criteria		Score
1	Age distribution of trees ¹	1
2	Wild, domestic and feral herbivore damage	2
3	Invasive plant species ³	3
4	Number of native tree species	2
5	Cover of native tree and shrub species	2
6	Open space within woodland ⁴	1
7	Woodland regeneration ⁵	1
8	Tree health	1
9	Vegetation and ground flora	1
10	Woodland vertical structure ⁶	1
11	Veteran trees ⁷	1
12	Amount of deadwood	1
13	Woodland disturbance ⁸	2
Total Score (out of a possible 39)		19
Condition Assessment Result		Condition Assessment Score
Total Score of 19 to 34		Poor (1)
Notes		
Footnote 1 - See EWBG method INDICATOR 1 for more information. If tree species is not a birch, cherry or Sorbus: 0 - 20 years (Young); 21 - 150 years (Intermediate); and >150 years (Old). A recognisable age class should be a consistent recognisable layer across the		

woodland or stand being assessed. Presence of a few saplings would not indicate that the woodland has an 'age class' of young trees.

Footnote 2 - See EWBG method INDICATOR 2 for more information. Browsing pressure is considered to be significant where >20% of vegetation visible within each survey plot shows damage from any type of browsing pressure listed.

Footnote 3 - See EWBG method INDICATOR 3 for more information. Check for presence of the following invasive non-native species: American skunk cabbage *Lysichiton americanus*; Himalayan balsam *Impatiens glandulifera*; Japanese knotweed *Fallopia japonica*; Cherry Laurel *Prunus laurocerasus*; Shallon *Gaultheria shallon*; Snowberry *Symphoricarpos albus*; Variegated yellow archangel *Lamium galeobdolon* subsp. *argenteum*; and *Rhododendron Rhododendron ponticum*.

Footnote 4 - See EWBG method INDICATOR 6 for more information. Open space within woodland in this context is temporary open space in which trees can be expected to regenerate (e.g. glades, rides, footpaths, areas of clear-fell). This differs from permanent open space where tree regeneration is not possible or desirable (e.g. tarmac, buildings, rivers).

Area is at least 10m wide with less than 20% covered by shrubs or trees.

Footnote 5 - See EWBG method INDICATOR 8 for more information. This indicator measures regeneration potential of the woodland by considering three classes: seedlings; saplings; and young trees of 4-7 cm DBH. All three classes would fall in the 'young' category of the 'age distribution of trees' indicator, the regeneration indicator is gathers additional information by considering regeneration potential i.e. if seedlings, saplings and young trees are all present that means natural regeneration processes are happening.

Footnote 6 - This indicator is looking at structural diversity and is useful to understand in conjunction with the age of trees in a woodland. Vertical structure is defined as the number of canopy storeys present. Possible storey values are: 1) Upper; 2) Complex: recorded when the stand is composed of multiple tree heights that cannot easily be stratified into broad height bands (such as upper, middle or lower); 3) Middle; 4) Lower; and 5) Shrub layer.

Footnote 7- See EWBG method INDICATOR 12 for more information. All ancient trees are veteran trees, but not all veteran trees are ancient. A veteran tree may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value. Veteran trees can be classified if they have four out of the five following features:

1. Rot sites associated with wounds which are decaying >400 cm²;
2. Holes and water pockets in the trunk and mature crown >5 cm diameter;
3. Dead branches or stems >15 cm diameter;
4. Any hollowing in the trunk or major limbs;
5. Fruit bodies of fungi known to cause wood decay.

Footnote 8 - See EWBG method INDICATOR 15 for more information. Examples of disturbance are: significant nutrient enrichment; soil compaction from trampling, machinery or animal poaching; litter."