

Egg Production Facility, Stranraer

784-B067657

Biodiversity Enhancement Feasibility Assessment

Mark Buchanan

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EXECUTIVE SUMMARY

Contents	Summary
Site Location	The 33 hectare (ha) site is located West Dhuloch in Dumfries and Galloway and is centred at Ordnance Survey National Grid Reference NW 98910 65912 (Figure 1).
Proposals	Tetra Tech understand the proposals involve the development of two large hen houses, together with a dung store, plus turning areas for each of the buildings. The brief provided by the client indicate the buildings would each be served by a lane, which would connect to an existing informal drive off the main road, which connects to the B738. It is understood that the footprint of each of the proposed buildings would be approximately 6,400 sqm, plus the dung store of approximately 288 sqm. Each building would accommodate 64,000 birds. The total footprint of the combined development is likely to be around 1.5 hectares.
Scope of this Survey(s)	<p>Current industry guidance states that a full planning applications should be supported by a biodiversity strategy. This strategy should be used to inform the Local Planning Authority and detail the baseline biodiversity of a site in relation to habitats, and if applicable, hedgerows and watercourses. It should then demonstrate the feasible biodiversity unit uplift that can be generated from prescribed interventions onsite and/or offsite.</p> <p>As such the purpose of this report is to:</p> <ul style="list-style-type: none"> • Quantify the baseline habitat biodiversity units present on site; • Quantify the post-development habitat biodiversity units on site; • Calculate the likely change in biodiversity units from pre- to post-development; and, • Provide a series of post-intervention strategies to ensure the development reaches a minimum of 10% BNG.
Results and Evaluation	<p>The proposed development will result in the direct loss of modified grassland which falls within the footprint of the development, with minor losses to gorse scrub as a result of the access road. This loss accounts for 9.85 habitat units. The remaining habitats will be retained.</p> <p>The combined habitat interventions included within the associated landscaping plans accounts for 9.24 habitat units and 1.24 hedgerow units. This is primarily through the establishment of an enhanced grassland composition associated with the chicken ranging areas using a 'poultry meadow mix', and also through the establishment of woodland pockets to act as development screening. These woodlands will be augmented through the creation of gorse hedgerows, to promote site connectivity. The two grassy swales which extend beyond the development will be of a semi-natural composition and seeded with a wetland mix appropriate to the moisture regime.</p> <p>As a consequence, the proposals achieve a 5.33% increase in habitat units, 343.11% increase in hedgerow units and 5.10% increase in watercourse units and biodiversity enhancement has been achieved. However, trading rules within the metric have not been satisfied. This is due to the loss of gorse scrub located within the footprint of the</p>

	<p>proposed access track. As the hedgerows will comprise of gorse, although not a 'habitat' in accordance with the Metric, there is an abundance of gorse post-intervention in comparison to baseline levels, and failure of the trading rules is a technicality.</p>
Recommendations	<p>Monitoring and Management</p> <p>To deliver successful implementation of the proposed habitats, a Habitat Management and Monitoring plan is recommended. This will detail:</p> <ul style="list-style-type: none"> • any immediate planting/habitat creation requirements or intervention to achieve an enhanced habitat, • habitat management requirements during the establishment period (up to 5 years), and; • long-term management and maintenance requirements for 40 years, in excess of the minimum 30 years stipulated. <p>Adherence to the document will maximise the likelihood that enhancement and/or creation targets are concise, proportionate, and SMART (Specific, Measurable, Achievable, Reasonable, Time-bound) and successful establishment of proposed habitats is achieved.</p> <p>Faunal Recommendations</p> <p>Provision of habitats for faunal species, although not currently measured in the Metric, is important for maximising biodiversity. Mitigation and enhancement measures for protected species including birds, amphibians and invertebrates are provided and detailed in the Preliminary Ecological Appraisal.</p>

1.0 INTRODUCTION

1.1 BACKGROUND

Tetra Tech Limited (Tetra Tech) was commissioned by Mark Buchanan in September 2024 to undertake a Biodiversity Assessment of a parcel of land located between Dogstone Hill and Mains of Dhuloch.

This report has been prepared by Senior Ecologist, Rob Gavan, MSc BSc, ACIEEM and the conditions pertinent to it are in Appendix A.

1.2 SITE DESCRIPTION

The 33 hectare (ha) site is located West Dhuloch in Dumfries and Galloway and is centred at Ordnance Survey National Grid Reference NW 98910 65912 (Figure 1). The main site component was several cow-grazed fields, with an area of waterlogged land to the south, which supported a rush pasture of varying diversity. The topography was undulating, with bedrock outcrops scattered across the site. To the northwest of the site boundary this had created raised areas and more depressed regions, where either gorse scrub *Ulex europaeas* or rush pasture dominated in a complex mosaic. There were several abandoned buildings, which were in a state of disrepair, with two dew ponds in the eastern field, and a smaller pond to the west. Unmanaged and gappy hedgerows were present as boundary markers to the east, whilst a ditch was present along the central access track, that led to farm buildings beyond the site boundary.

There were three boundary features associated with this assessment. The red line boundary comprises the planning application extent, the purple line boundary comprises the development extents, whilst the blue line boundary illustrates the wider survey effort (Figure 1). There has been several iterations of the application boundary, with a finalised plan provided after the ecology survey was undertaken. Consequently, the associated ecological appraisal (Tetra Tech, 2024) refers to three different boundary features. For the purpose of this assessment, the purple line boundary encompasses the extents of the proposed development and is hereafter referred to as “the ”. This is the area subject to assessment within the Biodiversity Net Gain metric (Defra, 2024) as a means of demonstrating biodiversity enhancements.

1.3 DEVELOPMENT PROPOSALS

Tetra Tech understand the proposals involve the development of two large hen houses, together with a dung store, plus turning areas for each of the buildings. The brief provided by the client indicate the buildings would each be served by a lane, which would connect to an existing informal drive off the main road, which connects to the B738. It is understood that the footprint of each of the proposed buildings would be approximately 6,400 sqm, plus the dung store of approximately 288 sqm. Each building would accommodate 64,000 birds. The total footprint of the combined development is likely to be around 1.5 hectares.

1.4 PURPOSE OF REPORT

Current industry guidance¹ states that planning applications, should be supported by a biodiversity strategy. This strategy should be used to inform the Local Planning Authority and detail the baseline biodiversity of a site in relation to habitats, and if applicable, hedgerows and watercourses. It should then demonstrate the feasible biodiversity unit uplift that can be generated from prescribed interventions onsite and/or offsite. Although BNG is not a mandatory requirement in Scotland, as per Dumfries and Galloway local policy all developments must enhance biodiversity, including, where relevant, restoring degraded habitats and building and strengthening nature networks and the connections between them, the submission of a BNG assessment is recommended.

As such the purpose of this report is to:

- Quantify the baseline habitat biodiversity units present on site;
- Quantify the post-development habitat biodiversity units on site;
- Calculate the likely change in biodiversity units from pre- to post-development; and,
- Provide a series of post-intervention strategies to ensure the development reaches a minimum of 10% BNG.

The details of this report will remain valid for a period of eighteen months from the date of the survey (i.e. until 22nd June 2026), after which the validity of this assessment should be reviewed to determine whether further updates are necessary. The recommendations within this report should be reviewed (and reassessed if necessary) should there be any changes to the red line boundary or development proposals which this report was based on.

Scientific names are provided at the first mention of each species using standard nomenclature (Stace, 2019) and common names (where appropriate) are then used throughout the rest of the report for ease of reading.

¹ CIEEM (2021): Biodiversity Net Gain Report and Audit Templates Chartered Institute of Ecology and Environmental Management, Winchester, UK.

2.0 METHODOLOGY

2.1 BIODIVERSITY GUIDANCE

The assessment has been completed using DEFRA's Statutory Biodiversity Metric (Department for Environment Food & Rural Affairs (DEFRA), 2024), hereafter referred to as 'the metric'. The associated methods were informed by the User guide (DEFRA, 2024a) and Biodiversity Net Gain: Good Practice Principles for Development (Baker, Hoskin, & Butterworth, 2019).

The methodology set out below defines a simplified version of the method used to carry out the BNG assessment. For full details including rules and methodology refer to the guidance documents referenced above.

2.2 HABITAT ASSESSMENT

An Extended UK Habitat Classification Survey was undertaken at the site on the 22nd November 2024, by Tetra Tech Senior Ecologist, Rob Gavan MSc BSc ACIEEM FISC 4.

The survey was completed in accordance with methodology outlined in the UK Habitat Classification Professional Edition V2 (UKHab Ltd., 2023), with the type and extent of each habitat present within the site recorded. The condition, strategic significance of each habitat and the associated distinctiveness of these habitats, are discussed in greater detail below.

Further detail of habitat descriptions with target notes can be found in the Preliminary Ecological Appraisal undertaken for this project (Tetra Tech, 2024 ref. 784-B067657_Egg Production Facility_PEA).

2.3 METRIC

The Metric generates a value measured in 'biodiversity units' for a site before development commences (referred to as the 'Baseline') and after development is completed (referred to as 'post-intervention'). The difference (positive or negative) between the two generated values is the output, provided as a percentage change.

The Metric assesses habitat parcel units, including urban trees, separately from linear habitat units which are split into either hedgerows (including line of trees) or rivers. Area habitats are measured in hectares, whereas linear habitats are measured in kilometres.

The Metric calculates an output based on the habitat parcel area / linear habitat length and a range of factors that are associated with its assessed quality. The generated biodiversity value is therefore based on 'quality' factors that are multiplied together. These are detailed in Table 1.

Habitats were separated into discrete parcels either where they were geographically discrete or where there was a change in habitat condition across a single location. Each parcel was recorded and calculated separately using the Metric. Urban trees are counted as habitat areas, although the method of calculating area is different to other habitat parcels, this is described below.

Trees

For individual trees (not including lines of trees or woodland) their area is calculated from stem diameter, which equates to a specified size group (small, medium or large). Full details on how this is calculated is defined within the User Guide. The number of individual trees of each size is then input to the 'Urban Tree Helper' table within the Metric, and an area is given which is entered into the Metric as a habitat area. Each of the factors listed in Table 1 below are then applied to this area.

The sizes of urban trees are measured using their diameter at breast height (DBH) and defined as:

- Small tree= <10 cm;
- Medium tree= 10-30 cm;
- Large tree= 50-90 cm.
- Very large tree= >90 cm

Hedgerows

In the Metric, watercourses, hedgerows and lines of trees are measured in watercourse and hedgerow biodiversity units. This uses length (km), distinctiveness, condition and strategic significance to calculate the unit value, the loss of which, need to be assessed separately to other biodiversity unit. As such, it is only possible to compensate for the loss of hedgerows / line of trees through the creation or enhancement of hedgerows / line of trees elsewhere.

Table 1 below sets out the methodology for calculating the baseline and post-intervention biodiversity values.

Table 1: Methodology for assessing factors within the Metric

Factor	Baseline	Post-intervention
Habitat type	Habitat types were recorded and mapped using UKhab (Figure 2).	The master landscape plans were interpreted (see Appendix E) and professional judgement used in classifying the designs into the relevant UKhab classifications (Figure 3). Additionally, areas suitable for habitat enhancements and creations were selected using professional judgement. This will dictate what is feasible both on and off-site.
Area	Habitats were separated into parcels: geographically discrete or a change in habitat condition across a single location. Each parcel was recorded and calculated separately within the Metric. Areas were calculated in hectares to two decimal places using digital mapping in ArcGIS ² .	
Distinctiveness	Distinctiveness value is automatically generated by the Metric based on habitat type. The overall distinctiveness categories used for habitat areas is shown within the User Guide, habitats will be defined as Very Low, Low, Medium, High or Very High.	
Condition	Habitat condition is a score based on the quality of the habitat, judged against the perceived ecological optimum state for that particular habitat. It is, therefore, a means of measuring	

² ESRI. ArcGIS online <https://www.arcgis.com/index.html>

Factor	Baseline	Post-intervention
	<p>variation in the quality of patches of the same habitat type rather than a measure of quality between habitat types.</p> <p>The ‘condition assessment’³ involves assessing each habitat type / parcel against criteria in the associated condition sheet, resulting in a condition score (Good, Moderate or Poor) which is then input into the Metric.</p> <p>Some intensively managed habitats have a pre-defined condition score; and for other very low distinctiveness habitats no assessment is required.</p>	
	A condition assessment was undertaken during the field survey for each habitat polygon, the results of which can be found in Appendix C.	A precautionary approach was adopted when allocating the condition of habitats which will be created and enhanced in line with prescribed interventions.
Strategic Significance	Strategic significance utilises published local plans and objectives to identify local priorities for targeting biodiversity and nature improvement. It works at a landscape scale and gives additional unit value to habitats that are located in preferred locations for biodiversity and other environmental objectives.	
Time to Target Condition	N/A	Time to target condition is a standard score automatically generated by the Metric based on how long the habitat type takes to establish. The time period to use is the length of time (in years) between the intervention and the point in time the habitat reaches the pre-agreed target quality (i.e. distinctiveness, condition, area). This time will vary between habitat types, between change scenarios (e.g. creation typically takes longer than enhancement).
Difficulty of Creation or Restoring a Habitat	N/A	Habitat creation carries an associated risk based on the difficulty and uncertainty of successfully creating, restoring or enhancing a habitat. A multiplier is therefore applied automatically by the Metric to recognise the difficulty of creating different habitats, detailed in the user guide. Where uncertainties have been identified further work will be required to help give confidence that the habitat creation or restoration will be successful.

All habitat interventions must take into consideration the trading rules as defined in the Statutory Metric User Guide. The type of trading depends on the distinctiveness and condition of the habitat. As such it is prohibited to enhance a habitat across ‘broad habitat groups’ if the distinctiveness or condition is not also enhanced. As per rule 1 of the Statutory Biodiversity Metric (Department for Environment Food & Rural Affairs (DEFRA), 2024a) “*The trading rules of this biodiversity Metric must be followed*” and “*if trading rules have not been satisfied, then a net gain in biodiversity cannot be claimed*”.

There were no ‘irreplaceable habitats’ present on site. For reference however, these habitats cannot be

³ Defra. Statutory Biodiversity Metric. Habitat Condition Assessment Sheets and Instructions

accounted for in the Metric and require separate consideration⁴.

2.4 LIMITATIONS

It was highlighted during this assessment that two grassy swales will be formed to the northeast and northwest of the site boundary i.e. extending from the purple line boundary into the red line boundary. At the end of each swale will be an area of standing water, which will connect into existing drainage networks. Both areas will be planted with a seed mixture suitable to saturated conditions. As these impacts will be limited to the narrow swale channels, and will be created with a semi-natural character, they are not considered as an impact within this biodiversity assessment.

Habitats have been mapped using a 'Minimum Mappable Unit' area of 25m² applied in line with UKhab methodology. As such some small areas of habitats have been excluded from the BNG assessment. Given the extent of the post-development landscaping to be implemented, this will not significantly affect the metric calculations undertaken as part of this assessment.

The metric does not override or undermine any existing planning policy or legislation, including the mitigation hierarchy, which should always be considered as the metric is applied. Furthermore, the metric does not change the protection afforded to biodiversity. Existing levels of protection afforded to protected species (such as for bats) and to habitats, are not changed by use of this or any other metric.

Finally, it is important to note that this report does not define the full detailed methodology for BNG assessment, and the guidance documents should be referred to where relevant and if necessary.

⁴ National Planning Policy Framework (2019) Glossary provides a definition and examples of irreplaceable habitats

3.0 RESULTS

For detailed descriptions of habitats identified on site, alongside photographs, please review section 3.2 of the associated Preliminary Ecological Appraisal report (Tetra Tech, 2024 ref. 784-B067657_Egg Production Facility_PEA). Information on BNG policy and habitat condition assessments are provided in Appendix B and C of this report.

The following section provides a summary of the habitat value in both the baseline and post-intervention stages of the project. For additional clarity the various steps in calculating the sites biodiversity value are provided in Table D.1 and Table D.2 of Appendix D.

3.1 BASELINE HABITAT UNITS

The site predominantly supported common and widespread habitats of limited ecological value. The main component was a species-poor, cow-grazed grassland, which was separated into an eastern and western section. Both these areas supported a collection of dew ponds, whilst various scrub communities, often predominated by gorse *Ulex europaeus*, present in elevated area, of what is a topographically varied site.

At the entrance of the farm track was a triangular expanse of purple moor grass and rush pasture (rush pasture), along with a grove of sycamore *Acer pseudoplatanus* trees. Additionally, several bedrock outcrops were scattered across the site, which supported a grassland composition indicative of more acidic communities. In two locations, one to the east around a quarry, and a second to the west along a ridge, the community was more established and was indicative of lowland dry acid grassland. Both rush pasture and lowland dry acid grassland are Habitats of Principal Importance (HPIs) listed on the Scottish Biodiversity List (NatureScot, 2020).

In terms of linear feature, defunct hawthorn hedges demarcated field boundaries to the west of the site, whilst along the access track was a species-diverse ditch which flowed northward. A second unestablished channel was present at the base of a mound to the west of the site.

Urban features comprised two derelict buildings, one of which had deteriorated to a pile of rubble, whilst a dry stone wall was present along the northern boundary of the eastern field.

As there is yet to be a published Local Nature Recovery Strategy for Dumfries and Galloway, habitats were considered to be of strategic significance if they were formally identified in plans or policies, particularly the Local Biodiversity Action Plan (2009). If formally identified, the habitat was then assessed to determine if it was of a suitable size and/or composition to provide strategic connectivity value to the wider landscape.

With relevance to the habitats identified across the site, farm ponds, lowland dry acid grassland, and rush pasture were strategically placed and were awarded high strategic significance. The remaining habitats were considered of low strategic significance.

Table 2 below provides a summary of the baseline habitat value of the site. This table should be read alongside Figure 2 for spatial context.

Table 2: Hedgerow Baseline Units

Habitat Type / UKhab code	Reference ID	Area (ha)	Habitat Distinctiveness	Condition	Strategic Significance	Units
Modified grassland (g4)	g4.1	16.07	Low	Poor	Low	32.14
Modified grassland (g4)	g4.2	15.53	Low	Poor	Low	31.06
Other lowland acid grassland (g1d)	g1d.1	0.03	Medium	Poor	Low	0.12
Lowland dry acid grassland (g1a)	g1a.1 / g1a.2	0.13	Very High	Moderate	High	2.39
Rush pasture (f2b)	f2b.1	0.45	Very High	Moderate	High	8.28
Rush pasture (f2b)	f2b.2	0.07	Very High	Poor	High	0.64
Mixed scrub (h3h)	h3h.1	0.08	Medium	Poor	Low	0.32
Gorse scrub (h3e)	h3e	0.23	Medium	Poor	Low	0.92
Bramble scrub (h3d)	br.1	0.03	Medium	NA	Low	0.12
Ponds (r1a)	Po.1	0.07	Medium	Moderate	High	0.64
Ponds (r1a)	Po.2	0.04	Medium	Moderate	High	0.37
Ponds (r1a)	Po.3	0.02	Medium	Moderate	High	0.18
Trees*	NA	0.70	Medium	Moderate	Low	5.60
Access track (u1e)	NA	0.22	Very Low	NA	Low	0.00
Abandoned building (u1f)	NA	0.01	Very Low	NA	Low	0.00
Total Area		33.68	Total Units			82.79

*Based on calculated root protection area.

Table 3: Hedgerow Baseline Units

Habitat Type / UKhab code	Reference ID	Length (km)	Habitat Distinctiveness	Condition	Strategic Significance	Units
Native hedgerow (h2a6)	H1	0.18	Low	Poor	Low	0.36
Total Length		0.18	Total Units			0.36

Table 4: Watercourse Baseline Units

Habitat Type / UKhab code	Reference ID	Length (km)	Habitat Distinctiveness	Condition	Strategic Significance	Units
Ditch (r2b)	D1	0.25	Medium	Moderate	Low	2.00
Ditch (r2b)	D2	0.16	Medium	Poor	Low	0.16
Total Length		0.41	Total Units			2.16

3.2 POST-INTERVENTION HABITAT UNITS

The provided Master Landscape Plans (Appendix E) was interpreted to provide the post-intervention habitats. The two key interventions are the creation of two chicken sheds and associated infrastructure in the western and eastern fields (one in each). These will be connected by a created access track which branches from the existing farm track. The location of both developments fit entirely within the species-poor, and low distinctiveness grassland, with only minor impacts to other habitats due to the construction of the access track. Habitats of very high distinctiveness will be retained. All linear features, including ditches and hedgerows will also be retained.

The swales which extend beyond the purple line boundary will be planted with a grassland mix associated with wetlands and will comprises a species rich composition. This has been interpreted as 'other neutral grassland' which is an enhancement of the species-poor composition present. Additionally, the expanse of grassland around the chicken shed will be seeded with a rough grassland composition 'poultry pasture mix'. This contains a variety of herbs which will increase species richness and improve structural diversity. This will increase the condition of what is a short, cropped and herb deficient grassland. Finally, woodland will be planted in pockets around the eastern and western developments. This will be planted with native species and managed to provide landscape variability in addition to screening. This will be planted alongside gorse hedgerows to improve site connectivity.

All habitat interventions are presented in Figure 3, with the appropriate calculations provided in Tables D.1 to D.4 of Appendix D.

3.3 HEADLINE RESULTS

A summary of the headline results is provided below in Table 3, with an extract of the Metric provided as a companion document to this report.

Table 5: Headline Results

Project Stage	Habitat Type	Units
On-Site baseline	Habitat units	82.89
	Hedgerow Units	0.36
	Watercourse Units	2.64
On Site post-intervention	Habitat units	87.31
	Hedgerow Units	1.60
	Watercourse Units	2.77
On Site total net unit change	Habitat units	4.42
	Hedgerow Units	1.24
	Watercourse Units	0.13

Project Stage	Habitat Type	Units
Total percentage change	Habitat units	5.33%
	Hedgerow Units	343.11%
	Watercourse Units	5.10%
Trading rules met?		No

4.0 CONCLUSION AND RECOMMENDATIONS

4.1 CONCLUSION

The proposed development will result in the direct loss of modified grassland which falls within the footprint of the development, with minor losses to gorse scrub as a result of the access road. This loss accounts for 9.85 habitat units. The remaining habitats will be retained.

The combined habitat interventions included within the associated landscaping plans accounts for 9.24 habitat units and 1.24 hedgerow units. This is primarily through the establishment of an enhanced grassland composition associated with the chicken ranging areas using a 'poultry meadow mix', and also through the establishment of woodland pockets to act as development screening. These woodlands will be augmented through the creation of gorse hedgerows, to promote site connectivity. The two grassy swales which extend beyond the development will be of a semi-natural composition and seeded with a wetland mix appropriate to the moisture regime.

As a consequence, the proposals achieve a 5.33% increase in habitat units, 343.11% increase in hedgerow units and 5.10% increase in watercourse units and **biodiversity enhancement has been achieved**. However, trading rules within the metric have not been satisfied. This is due to the loss of gorse scrub located within the footprint of the proposed access track. As the hedgerows will comprise of gorse, although not a 'habitat' in accordance with the Metric, there is an abundance of gorse post-intervention in comparison to baseline levels, and failure of the trading rules is a technicality.

4.2 RECOMENDATIONS

Monitoring and Management

To deliver successful implementation of the proposed habitats, a Habitat Management and Monitoring plan is recommended. This will detail:

- any immediate planting/habitat creation requirements or intervention to achieve an enhanced habitat,
- habitat management requirements during the establishment period (up to 5 years), and;
- long-term management and maintenance requirements for 40 years, in excess of BNG requirements.

Adherence to the document will maximise the likelihood that enhancement and/or creation targets are concise, proportionate, and SMART (Specific, Measurable, Achievable, Reasonable, Time-bound) and successful establishment of proposed habitats is achieved.

Faunal Recommendations

Provision of habitats for faunal species, although not currently measured in the Metric, is important for maximising biodiversity. Mitigation and enhancement measures for protected species including birds, amphibians and invertebrates are provided and detailed in the Preliminary Ecological Appraisal and targeted species survey recommendations.

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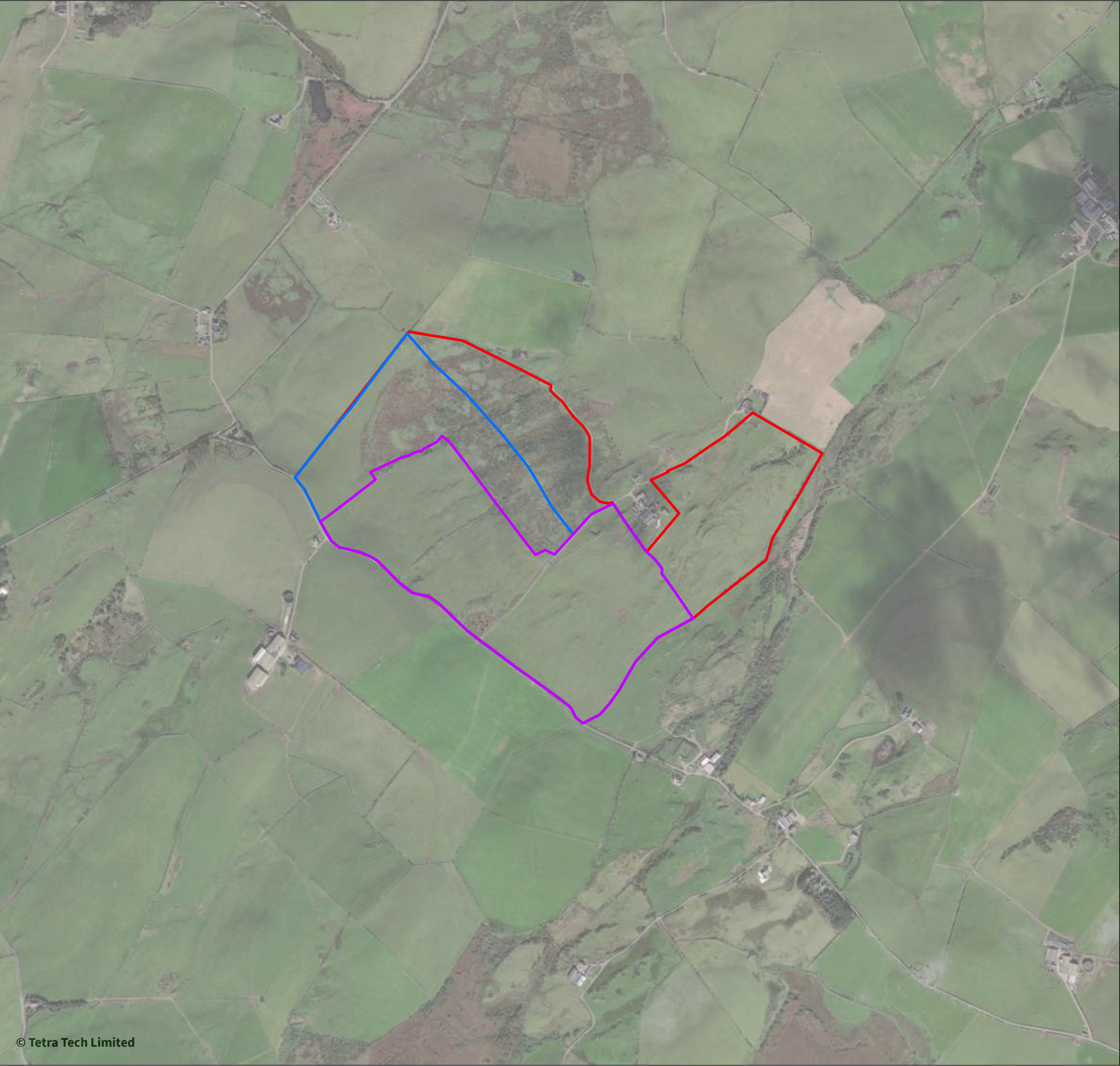
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FIGURES

Figure 1 – Site Location Plan

Figure 2 – Baseline UKHab Maps

Figure 3 – Post-intervention UKHab Maps



Site Location Plan

Egg Production Facility, Stranraar



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Legend

- Planning application boundary
- Survey area boundary
- Site boundary (for purpose of ecological assessment)

Notes:

Drawn by: DYLAN.GUSSMAN

Checked by: Rob Gavan

Figure No. 1

Revision No. A

19 December 2024

0 100 200 300 400 Meters
Scale 1:10,000 @A3

British National Grid

NGR: 198802E 566091N

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Baseline Plan

Egg Production Facility, Stranraar



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Legend

- Site boundary (for purpose of ecological assessment)
- g1a - Lowland dry acid grassland
- g1d - Other lowland acid grassland
- g4 - Modified grassland
- h3d - Bramble scrub
- h3e - Gorse scrub
- h3h - Mixed scrub
- r1a - Eutrophic standing water
- u1e - Built linear features
- u1f - Sparsely vegetated urban land
- f2b - Purple moor grass and rush pastures
- h2a - Native hedgerow
- r2b - Other rivers and streams
- u1e - Built linear feature
- Rural Tree
- Target notes

Symbology defined by UK Habs. <https://ukhab.org/ukhab-documentation/>

Notes:

Drawn by: DYLAN.GUSSMAN

Checked by: Rob Gavan

Figure No. 2

Revision No. A

20 December 2024

0 50 100 150 200 Meters
Scale 1:5,000 @A3

British National Grid
NGR: 198631E 565967N

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Tetra Tech Limited.
Registered in England
number: 01959704



Post-intervention Plan

Egg Production Facility, Stranraar



Mark Buchanan

Legend

- Site boundary (for purpose of ecological assessment)
- g1a - Lowland dry acid grassland
- g1d - Other lowland acid grassland
- g3c - Other neutral grassland
- g4 - Modified grassland
- h3d - Bramble scrub
- h3e - Gorse scrub
- h3h - Mixed scrub
- r1a - Eutrophic standing water
- u - Urban
- u1b5 - Buildings
- u1e - Built linear features
- u1f - Sparsely vegetated urban land
- f2b - Purple moor grass and rush pastures
- w1g - Other woodland, broadleaved
- h2a - Native hedgerow
- r2b - Other rivers and streams
- u1e - Built linear feature
- Rural Tree

Symbology defined by UK Habs. <https://ukhab.org/ukhab-documentation/>

Notes:

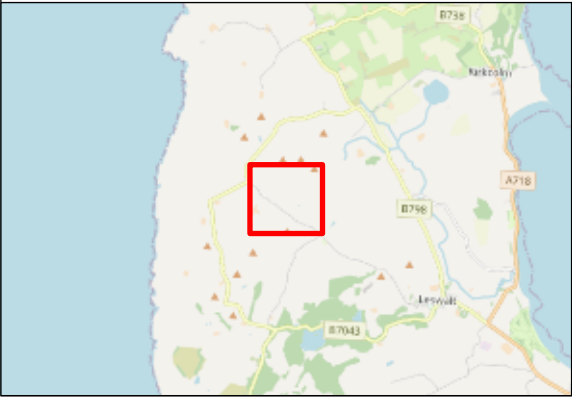
Drawn by: DYLAN.GUSSMAN
Checked by: Rob Gavan

Figure No. 3
Revision No. A
20 December 2024

0 50 100 150 200 Meters
Scale 1:5,000 @A3

British National Grid
NGR: 198694E 566003N

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APPENDICES

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APPENDIX A: REPORT CONDITIONS

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The report refers, within the limitations stated, to the environment of the Site in the context of the surrounding area at the time of the inspections. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the Site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The “shelf life” of the Report will be determined by a number of factors including; its original purpose, the Client’s instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

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The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on Site during construction. Tetra Tech accept no liability for issues with performance arising from such factors.

APPENDIX B: BNG POLICY

National Planning Framework 4 (NPF4) is the top tier of planning policy. The Framework provides guidance to local authorities and other agencies on planning policy and the operation of the planning system.

“Policy 1 gives significant weight to the nature crisis to ensure that it is recognised as a priority in all plans and decisions. Policy 4 protects and enhances natural heritage, and this is further supported by Policy 5 on soils and Policy 6 on forests, woodland and trees. Policy 20 also promotes the expansion and connectivity of blue and green infrastructure, whilst Policy 10 recognises the particular sensitivities of coastal areas.

Protection of the natural features of brownfield land is also highlighted in Policy 9, and protection of the green belt in Policy 8 will ensure that biodiversity in these locations is conserved and accessible to communities, bringing nature into the design and layout of our cities, towns, streets and spaces in Policy 14.

Most significantly, Policy 3 plays a critical role in ensuring that development will secure positive effects for biodiversity. It rebalances the planning system in favour of conserving, restoring and enhancing biodiversity and promotes investment in nature-based solutions, benefiting people and nature. The policy ensures that Local Development Plans (LDPs) protect, conserve, restore and enhance biodiversity and promote nature recovery and nature restoration. Proposals will be required to contribute to the enhancement of biodiversity, including by restoring degraded habitats and building and strengthening nature networks. Adverse impacts, including cumulative impacts, of development proposals on the natural environment will be minimised through careful planning and design, taking into account the need to reverse biodiversity loss. Development proposals for national, major or Environmental Impact Assessment (EIA) development will only be supported where it can be demonstrated that the proposal will conserve, restore and enhance biodiversity, including nature networks, so they are in a demonstrably better state than without intervention. Proposals for local development will include appropriate measures to conserve, restore and enhance biodiversity.”

See here for full details: <https://www.gov.scot/publications/national-planning-framework-4/>

APPENDIX C: BASELINE CONDITION ASSESSMENT DATA

Modified grassland – g4.1 / g4.2

The two fields within the site boundary (purple line boundary) comprised a cow-grazed, shortly cropped and species-poor grassland sward. There were minor variations of this habitat across the site, dictated by the elevation and corresponding moisture regime. In wetter regions the sward contained a greater abundance of Yorkshire fog *Holcus lanatus*, soft rush *Juncus effusus* and creeping buttercup *Ranunculus repens*, with drier regions dominated by perennial ryegrass *Lolium perenne* and broadleaved dock *Rumex obtusifolius*.

Condition Assessment Criteria		Criteria met (Y/N)	Notes / Justification
1	There are 6 - 8 vascular plant species per m ² present, including at least 2 forbs	N	The composition was species-poor and dominated by rye grass.
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	N	Grazed by cows and of a consistent height.
3	Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble <i>Rubus fruticosus</i> agg. may be present). Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Y	Various scrub communities were present but comprised less than 20%.
4	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	Y	No physical damage is evident.
5	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens) ² .	N	Bedrock was present but does not meet the criteria of bare ground for colonisation.
6	Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.	Y	There was no bracken
7	There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA ⁴).	Y	There was no invasive species identified on Site.
Total Criteria		4	Poor

*As the grassland failed the first criterion, it cannot achieve moderate or good condition.

Other lowland acid grassland – g1d.1

This habitat was confined the bedrock outcrops located in the eastern field (g4.1). They were sparsely populated with bare stone abundant, but in vegetated areas, creeping bent *Agrostis stolonifera* was dominant, with sheep sorrel *Rumex acetosella*, sheep fescue *Festuca ovina*, and crested dog's tail *Cynosurus cristatus* locally occasional. Signs of improvement were frequent with common mouse-ear chickweed, perennial ryegrass and white clover *Trifolium repens* encroaching from the peripheries.

Condition Assessment Criteria		Criteria met (Y/N)	Notes / Justification
1	The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type. Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.	N	The habitat was too fragmented to be considered a 'good example', whilst few indicator species were present to accurately determine composition.
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	N	The sward was partially grazed, where cows could access.
3	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens.	N	Bedrock was present but does not meet the criteria of bare ground for colonisation.
4	Cover of bracken <i>Pteridium aquilinum</i> is less than 20% and cover of scrub (including bramble <i>Rubus fruticosus</i> agg.) is less than 5%.	Y	There was no bracken present.
5	Combined cover of species indicative of suboptimal condition and 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.	N	Encroachment from the surrounding improved field, had resulted in occasional rye and dock.
Total Criteria		1	Poor

Lowland dry acid grassland – g1a.1 / g1a.2

In specific two areas, where the bedrock outcrop is more substantial, a more established acid grassland is present with species, in addition to those listed above, including heath bedstraw *Galium saxatile*, rough hawkbit *Leontodon hispidus*, heath-grass *Danthonia decumbens* and carpets of both mosses and lichens. This was situated along the face and banks of an historic quarry (g1a.1) and a large rock outcrop to the west (g1a.2).

Condition Assessment Criteria		Criteria met (Y/N)	Notes / Justification
1	The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type. Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.	Y	The habitat, although small, presented a good assemblage of species indicative of this community.
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	N	The sward was partially grazed, where cows could access.
3	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens.	N	Bedrock was present but does not meet the criteria of bare ground for colonisation.
4	Cover of bracken <i>Pteridium aquilinum</i> is less than 20% and cover of scrub (including bramble <i>Rubus fruticosus</i> agg.) is less than 5%.	Y	There was no bracken present.
5	Combined cover of species indicative of suboptimal condition and 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.	Y	There was limited encroachment in these isolated areas.
Total Criteria		3	Moderate

Purple Moor Grass and Rush Pasture – f2b.1

There were three observably different varieties of this habitat across the site. To the west of the farm track entrance was a diverse area dominated by tufted hairgrass *Deschampsia cespitosa* and soft rush (f2b.1). Surface water was frequent, but diminished to the west, away from the ditch. The species richness followed the same pattern, with violets *Viola* sp., willowherb *Epilobium*, toad rush *Juncus bufonius*, water forget-me-not *Myosotis scorpioides* in proximity to the ditch line, whilst in drier regions foxglove *Digitalis purpurea* and bramble *Rubus fruticosus* agg. is more frequent.

Condition Assessment Criteria		Criteria met (Y/N)	Notes / Justification
1	The water table is at, or near the surface throughout the year - this could be open water or saturation of soil at the surface. There is no artificial drainage, unless specifically to maintain water levels as specified above. Note - this criterion is essential for achieving Good condition.	N	A field ditch was present along the eastern boundary.
2	The parcel represents a good example of its specific habitat type - the appearance and composition of the vegetation closely matches its UKHab description, with vascular and non-vascular characteristic indicator species consistently present.	Y	Indicator species were abundant throughout, particularly to the east where the ground was more saturated.
3	The water supplies (groundwater, surface water and or rainwater) to the wetland are of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	Y	No obvious signs of pollution.
4	Cover of scrub and scattered trees are less than 10%.	N	Scattered sycamore, alder and hawthorn were present, and contributed ca. 13%
5	Cover of bare ground is less than 5%.	N	Minor poaching by cattle has created bare areas but not in excess of 5%.
6	There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA) and species indicative of suboptimal condition make up less than 5% of ground cover.	N	No invasive species were present, but bramble was frequent to the west.
7	No more than 25% of the habitat area has a continuous cover of litter (such as dead vegetation) preventing regeneration.	Y	Ground litter was relatively sparse.
Total Criteria		4	Moderate

Purple Moor Grass and Rush Pasture – f2b.2

To the northwest of the site is a large expanse of rush pasture, which forms a mosaic of species-poor rush dominated areas (f2b.2) and more diverse areas of greater saturation (f2b.3). The more diverse area fall outside the site boundary.

Condition Assessment Criteria		Criteria met (Y/N)	Notes / Justification
1	The water table is at, or near the surface throughout the year - this could be open water or saturation of soil at the surface. There is no artificial drainage, unless specifically to maintain water levels as specified above. Note - this criterion is essential for achieving Good condition.	Y	A drainage ditch was present to the north beyond the habitat community.
2	The parcel represents a good example of its specific habitat type - the appearance and composition of the vegetation closely matches its UKHab description, with vascular and non-vascular characteristic indicator species consistently present.	N	Indicator species were lacking, with much of the habitat dominated by soft rush.
3	The water supplies (groundwater, surface water and or rainwater) to the wetland are of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	Y	No obvious signs of pollution.
4	Cover of scrub and scattered trees are less than 10%.	N	Scattered gorse made a patchy mosaic and comprised greater than 20%
5	Cover of bare ground is less than 5%.	N	Major poaching by cattle has created bare areas in excess of 5%.
6	There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA) and species indicative of suboptimal condition make up less than 5% of ground cover.	N	The dominance of soft rush, and occurrence of nettle suggests species of sub-optimal conditions.
7	No more than 25% of the habitat area has a continuous cover of litter (such as dead vegetation) preventing regeneration.	Y	Ground litter was relatively sparse.
Total Criteria		3	Poor

Purple Moor Grass and Rush Pasture – f2b.3

f2b.3 contained *Sphagnum* sp. alongside species such as jointed rush *Juncus articulatus*, tormentil *Potentilla erecta*, water plantain *Alisma plantago-aquatica*, marsh horsetail *Equisetum palustre*, water forget-me-not and bog stitchwort *Stellaria alsine*. There was an observable trend of more depressed areas, holding more saturated communities, which in turn were more diverse. This northern area formed a mosaic with gorse scrub, with only a small amount present within the purple line boundary.

Condition Assessment Criteria		Criteria met (Y/N)	Notes / Justification
1	The water table is at, or near the surface throughout the year - this could be open water or saturation of soil at the surface. There is no artificial drainage, unless specifically to maintain water levels as specified above. Note - this criterion is essential for achieving Good condition.	Y	A drainage ditch was present to the north beyond the habitat community.
2	The parcel represents a good example of its specific habitat type - the appearance and composition of the vegetation closely matches its UKHab description, with vascular and non-vascular characteristic indicator species consistently present.	Y	Indicator species were abundant throughout these more saturated areas.
3	The water supplies (groundwater, surface water and or rainwater) to the wetland are of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	Y	No obvious signs of pollution.
4	Cover of scrub and scattered trees are less than 10%.	N	Scattered gorse made a patchy mosaic and comprised greater than 20%
5	Cover of bare ground is less than 5%.	Y	There was only minor poaching in these areas due to the greater saturation.
6	There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA) and species indicative of suboptimal condition make up less than 5% of ground cover.	Y	No invasive species were present and indicators of sub-optimal conditions were minor.
7	No more than 25% of the habitat area has a continuous cover of litter (such as dead vegetation) preventing regeneration.	Y	Ground litter was relatively sparse.
Total Criteria		6	Good

Mixed scrub – h3h.1

A small area of hawthorn *Crataegus monogyna*, gorse and bramble scrub was present between the western fields. This appears to have been an historic hedgerow which has developed into a band of scrub.

Condition Assessment Criteria		Criteria met (Y/N)	Notes / Justification
1	The parcel represents a good example of its habitat type - the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range). - At least 80% of scrub is native, - There are at least three native woody species, - No single species comprises more than 75% of the cover (except hazel <i>Corylus avellana</i> , common juniper <i>Juniperus communis</i> , sea buckthorn <i>Hippophae rhamnoides</i> or box <i>Buxus sempervirens</i> , which can be up to 100% cover).	N	Only two woody species present.
2	Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.	N	Not all age classes present.
3	There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA5) and species indicative of suboptimal condition make up less than 5% of ground cover.	Y	None identified.
4	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	N	The component is too small to comprise a transitional edge.
5	There are clearings, glades or rides present within the scrub, providing sheltered edges.	N	There area was too small to contain these features.
Total Criteria		1	Poor

Gorse scrub – h3e

Gorse scrub was present across the site, particularly to the northwest where it created a mosaic with rush pasture. These areas varied in density, but comprised greater than 95% scrub, with rare occurrences in highly saturated areas of willow *Salix* sp.

Condition Assessment Criteria		Criteria met (Y/N)	Notes / Justification
1	The parcel represents a good example of its habitat type - the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range). - At least 80% of scrub is native,	N	Only two woody species present.

	- There are at least three native woody species, - No single species comprises more than 75% of the cover (except hazel <i>Corylus avellana</i> , common juniper <i>Juniperus communis</i> , sea buckthorn <i>Hippophae rhamnoides</i> or box <i>Buxus sempervirens</i> , which can be up to 100% cover).		
2	Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.	N	Not all age classes present.
3	There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA5) and species indicative of suboptimal condition make up less than 5% of ground cover.	Y	None identified.
4	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	N	The components were pockets with sharp transitions.
5	There are clearings, glades or rides present within the scrub, providing sheltered edges.	N	The pockets were individually too small to contain these features.
Total Criteria		1	Poor

Ponds – Po.1 / Po.2 / Po.3

Three dew ponds were present across the site during the walkover. These were shallow-sloped and highly poached. They varied in size and are likely to be ephemeral. The fringes were primarily grassy, but contained soft rush, brooklime *Veronica beccabunga* and lesser spearwort *Ranunculus flammula*. Waterfowl were present in the larger of the ponds to the east (Po.1).

Condition Assessment Criteria		Criteria met (Y/N)	Notes / Justification
1	The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.	Y	Turbidity is high but grazed by livestock.
2	There is semi-natural habitat (moderate distinctiveness or above) completely surrounding the pond, for at least 10 m from the pond edge for its entire perimeter.	N	Primary habitat is grazed grassland
3	Less than 10% of the water surface is covered with duckweed <i>Lemna</i> spp. or filamentous algae.	Y	None identified.
4	The pond is not artificially connected to other waterbodies, such as agricultural ditches or artificial pipework.	Y	The ponds were separate.

5	Pond water levels can fluctuate naturally throughout the year. No obvious artificial dams ² , pumps or pipework.	Y	Ponds can fluctuate naturally.
6	There is an absence of listed non-native plant and animal species.	Y	None identified.
7	The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.	Y	None identified.
8	Emergent, submerged or floating plants (excluding duckweed) cover at least 50% of the pond area which is less than 3 m deep.	N	Cover is less than 50%
9	The pond surface is no more than 50% shaded by adjacent trees and scrub.	Y	Trees not present
Total Criteria		7	Moderate

Trees

To the south in around the rush pasture (f2b.1) was a cluster of 55 trees. Of which, 43 trees were semi-mature sycamore *Acer psuedoplatanus*, and 12 were standing dead stumps. The sycamore were all in poor condition, with fungal bodies present.

Condition Assessment Criteria		Criteria met (Y/N)	Notes / Justification
1	The tree is a native species (or at least 70% within the block are native species).	Y	Trees were sycamore
2	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	N	Very gappy canopy
3	The tree is mature (or more than 50% within the block are mature) ¹ .	N	All semi-mature or dead
4	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	N	A percentage of the trees were dead, with many showing signs of ill-health
5	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	Y	The dead trees had superficial cavity and deadwood of use to invertebrates.

6	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y	All trees present over a grassland community
Total Criteria		3	Moderate

Hedgerows - H1 / H2

A defunct, but native hedgerow was present to the west of the site. It comprised of hawthorn, but with large gaps between shrubs. In areas it had been colonised by gorse and bramble, forming small sections of scrub (as discussed above).

	Attributes and functional groupings	Criteria	Criteria description	Criterion passed (Y/N)	Justification
A1.	Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. 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). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).	N	Average height ca. 1.2m
A2.	Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn <i>Prunus spinosa</i> suckers) are only included in the width estimate when they are >0.5 m in height 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).	N	Average width ca. 0.9m
B1.	Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length	This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).	N	Very gappy base

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B2.	Gap - hedge canopy continuity	Gaps make up <10% of total length; and No canopy gaps >5 m	This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). 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).	N	Very gappy canopy
C1.	Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: · Measured from outer edge of hedgerow; and · Is present on one side of the hedgerow (at least).	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow. This criterion recognises the value of the hedgerow 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.	N	Grazed grassland below
C2.	Nutrient-enriched perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	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, does not exceed the 20% cover threshold.	N	Improved field below
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA ³) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website ⁴ , as well as the BSBI website ⁵ where the 'Online Atlas of the British and Irish Flora' ⁶ contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website ⁷ .	Y	No invasive species or archeophytes identified.
D2.	Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	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 (for example, excessive hedgerow cutting).	Y	No obvious signs of damage.
Total Criteria				2	Poor

Ditches – D1		
Two ditches were present to the west. One of which, was wholly within the site boundary, a second was partially within and third was present to the norwest of the survey boundary. The first ditch (D1) was present to the west of the farm track. It was well established, with grassy banks and a strong flow northwards, at the time of survey. It was ca 1 m deep and 1 m wide with species including large bittercress <i>Cardamine hirsuta</i> , floating sweetgrass <i>Glyceria flutans</i> , round-leaved crowfoot <i>Ranunculus omiophyllus</i> .		
Condition Assessment Criteria	Criteria met (Y/N)	Notes / Justification
1 The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	Y	Water quality appeared clear and no signs of pollution.
2 A range of emergent, submerged and floating-leaved plants are present. As a guide >10 species of emergent, floating or submerged plants present in a 20 m ditch length.	Y	One section of ditch contained in excess of 10 species.
3 There is less than 10% cover of filamentous algae and or duckweed <i>Lemna</i> spp. (these are signs of eutrophication).	Y	None identified.
4 A fringe of aquatic marginal vegetation is present along more than 75% of the ditch.	N	Not diverse for its full length.
5 Physical damage is evident along less than 5% of the ditch, with examples of damage including: excessive poaching, damage from machinery use or storage, or any other damaging management activities.	N	Poaching was observed.
6 Sufficient water levels are maintained - as a guide a minimum summer depth of approximately 50 cm in minor ditches and 1 m in main drains.	Y	Water levels appear constant.
7 Less than 10% of the ditch is heavily shaded.	Y	No shaded.
8 There is an absence of non-native plant and animal species.	Y	No invasives present.
Total Criteria	7	Moderate

Ditches – D2		
The second ditch, was more indicative of an established surface water channel, with no obvious banks. It was formed along the base of a mound to the west of the site, with species indicative of the adjacent grassland field. It flowed into a pool (Po.5) at the southern extent of the rush pastureland.		
Condition Assessment Criteria	Criteria met (Y/N)	Notes / Justification
1 The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	Y	Water quality appeared clear and no signs of pollution.
2 A range of emergent, submerged and floating-leaved plants are present. As a guide >10 species of emergent, floating or submerged plants present in a 20 m ditch length.	N	A simple grass component.
3 There is less than 10% cover of filamentous algae and or duckweed <i>Lemna</i> spp. (these are signs of eutrophication).	Y	None identified.
4 A fringe of aquatic marginal vegetation is present along more than 75% of the ditch.	N	Not diverse for its full length.
5 Physical damage is evident along less than 5% of the ditch, with examples of damage including: excessive poaching, damage from machinery use or storage, or any other damaging management activities.	N	Poaching was observed.
6 Sufficient water levels are maintained - as a guide a minimum summer depth of approximately 50 cm in minor ditches and 1 m in main drains.	N	Water levels appear transient as no established channel.
7 Less than 10% of the ditch is heavily shaded.	Y	No shaded.
8 There is an absence of non-native plant and animal species.	Y	No invasives present.
Total Criteria	4	Poor

APPENDIX D: BIODIVERSITY CALCULATIONS

Table D.1. Habitat loss and retention

Habitat Type / UKhab code	Total Area (ha)	Total Units	Area Lost	Area Enhanced	Area Retained	Units Retained
Modified grassland (g4)	16.07	32.14	2.06	2.01	12.00	24.00
Modified grassland (g4)	15.53	31.06	2.32	1.43	11.78	23.56
Other lowland acid grassland (g1d)	0.03	0.12	0.01	0.00	0.02	0.08
Lowland dry acid grassland (g1a)	0.13	2.39	0.00	0.00	0.13	2.39
Rush pasture (f2b)	0.45	8.28	0.00	0.00	0.45	8.28
Rush pasture (f2b)	0.07	0.64	0.00	0.00	0.07	0.64
Mixed scrub (h3h)	0.08	0.32	0.00	0.00	0.08	0.32
Gorse scrub (h3e)	0.23	0.92	0.03	0.00	0.20	0.80
Bramble scrub (h3d)	0.03	0.12	0.00	0.00	0.03	0.12
Ponds (r1a)	0.07	0.64	0.07	0.00	0.00	0.00
Ponds (r1a)	0.04	0.37	0.00	0.00	0.04	0.37
Ponds (r1a)	0.02	0.18	0.02	0.00	0.00	0.00
Trees*	0.7	5.60	0.00	0.00	0.70	5.60
Access track (u1e)	0.22	0.00	0.22	0.00	0.00	0.00
Abandoned building (u1f)	0.01	0.00	0.00	0.00	0.01	0.00
Grand Total	33.68	82.79	4.73	3.44	25.51	66.16

Table D.2. Habitat Enhancement

Habitat Type / UKhab code	Area Enhanced	Distinctiveness Enhancement	Condition Enhancement	Mechanism for Enhancement	Units Generated
Modified grassland (g4)	1.95	NA	Poor - Moderate	The expanse of grassland around the chicken shed will be seeded with a rough grassland composition 'poultry pasture mix'. This contains a variety of herbs which will increase	6.84
Modified grassland (g4)	1.43	NA	Poor - Moderate		4.84

Habitat Type / UKhab code	Area Enhanced	Distinctiveness Enhancement	Condition Enhancement	Mechanism for Enhancement	Units Generated
				species richness and improve structural diversity. This will increase the condition of what is a short, cropped and herb deficient grassland.	
Modified grassland (g4)	0.05	Other neutral grassland	Poor - Moderate	Around the swales a wet grassland mixture will be seeded which will contain an abundance of herbs, and will be managed to increase structural diversity.	0.31
Total Area	3.44			Total Units Generated	12.01

D.3. Habitat Creation

Habitat Type / UKhab code	Area Created	Created Condition	Description of Creation	Units Generated
Developed land; sealed surface	1.26	NA	Sealed developed land encompassing the chicken sheds.	0.00
Buildings	1.30	NA	The chicken sheds and associated buildings	0.00
Access tracks	0.20	NA	New road network connecting the sheds with the farm track.	0.00
Other broadleaved woodland	1.97	Moderate	Bands of woodland will be planted as a screening mechanism, but also to provide landscape variability. The species will be native including birch <i>Betula</i> sp, alder <i>Alnus</i> sp. and oak <i>Quercus</i> sp.	9.24
Total Area	3.15		Total Units	9.24

D.4. Hedgerow Creation

Habitat Type / UKhab code	Length Created (km)	Created Condition	Description of Creation	Units Generated
Native hedgerow	0.64	Poor	Linear strips of gorse scrub will be planted in the eastern field. These will lead down from the chicken shed and also run along the road.	1.24
Total Area	0.64		Units Generated	1.24

D.5. Ditch Creation

Habitat Type / UKhab code	Length Created (km)	Created Condition	Description of Creation	Units Generated
Ditch	0.03	Moderate	Within the purple line boundary which constitutes this assessment two grassy swales are present. These extend beyond the boundary extents and only the length within has been captured. These will be planted with a grassy mix as discussed for 'other neutral grassland' above.	0.13
Total Area	0.03		Units Generated	0.13

APPENDIX E: MASTER LANDSCAPE DESIGN



Proposed Egg Production Facility
Mains of Dhuloch

Landscape Proposals L-1000

LEGEND

EXISTING SITE FEATURES

- Planning application boundary
- Contours
- Stock proof fence
- Trees and scrub to be retained
- Marsh and wet ground
- Grassland
- Pond
- Watercourse

PROPOSED SITE FEATURES

- Building
- Access road
- Bird paddock fencing
- Bird shelter
- Native tree and shrub planting
Species composition:
Trees at 30%
10% *Alnus glutinosa* Alder
15% *Betula pubescens* Downy birch
5% *Quercus petraea* Sessile oak
Shrubs at 70%
10% *Ilex aquifolium* Holly
30% *Salix caprea* Goat willow
30% *Salix cinerea* Grey willow
- Scrub planting
Species composition:
100% *Ulex europaeus* Gorse
- Grassland (e.g. Diverse Poultry Pasture mix from GSS or similar suitable poultry pasture mix)
Sowing rate of 20g/m². Species composition:
32% NUSPRINT certified Annual Ryegrass
20% REVERENT certified Strong Fescue
20% BORNITO certified Sheeps/Hard Fescue
15% HUMBOLDT certified Chewings Fescue
2% AURORA certified Alsike Clover
2% LEO certified Birdsfoot Trefoil
2% HUIA certified Medium White Clover
2% GARANT certified Red Clover
5% * MIXED FORAGE HERBS

All native tree, shrub and scrub planting will be planted in the dormant planting season as 40-60cm transplant size bare root stock (or in a 3L container if pot grown). Tree and shrub group stock will be planted at 2m spacing within the paddocks to allow the birds to roam between plants and at 1.75m spacing in groups situated outside the paddocks to strengthen the visual screening function of the planting feature. Stock will be planted in single species groups of 5-25 no. within tree and shrub groups. Each planting group will include a minimum 5m depth shrub edge to provide a woodland edge and encourage birds to explore. Gorse scrub will be planted at 1.0m spacing. All plants will be protected by a no less than 0.75m high shelter supported by a softwood stake during the five year establishment period.

Landscape Proposals:

Tree and shrub planting is proposed in groups to provide visual screening or softening of views of the proposed development from viewpoints to the north including residents in properties along B738, from residents to the south at Glengyre and from residents at Little Glengyre to the north east. By Dunholm directly opposite the site the planting is positioned to allow for retention of the longer views to the hills to the north east whilst providing screening/softening of the Unit A shed within the view. The groups are included within the paddocks to provide habitat and shelter for the birds and positioned to avoid the rocky outcrops on site. The planting is proposed at a scale and pattern consistent with the wider landscape structure. In addition, lines of gorse scrub is proposed to tie the tree and shrub groups and paddock fencing into existing boundaries and areas of scrub to reflect the local landscape character and further strengthen integration of the proposals into the landscape.

