# Appendix 4.2: Biodiversity Net Gain Report

SP Energy Networks

# 400kV OHL ZV Diversion
# Biodiversity Net Gain Report

**Final report**
Prepared by LUC
August 2024

# Contents

# Chapter 1
# Introduction

## Background

**1.1** LUC has prepared this Biodiversity Net Gain (BNG) report on behalf of SP Energy Networks (SPEN) in support of an application to the Scottish Government Energy Consents Unit (ECU) for consent under Section 37 of the Electricity Act 1989 (as amended) ('the Electricity Act') and deemed planning permission under Section 57(2) of the Town and Country Planning (Scotland) Act 1997 (as amended), to remove two existing towers (and associated overhead line (OHL) connections) from the existing 400kV Scotland to England interconnector (ZV route) and replace with three new installed towers and associated overhead line connections between the towers to maintain a continuous connection. Hereafter referred to as 'the Proposed Development'.

**1.2** This report presents the results of a BNG Assessment to establish the baseline requirements to achieve 'No Net Loss' (NNL). The BNG assessment is informed by the project description and baseline data presented in **Chapter 4**: **Ecology** of the Environmental Appraisal Report (EAR) for the Proposed Development[1] . This report does not include post-consent requirements for delivering 'no net loss' as these will require to be developed by SPEN at a later stage within the project, particularly where there is a need for offsite interventions.

## Purpose of Assessment

**1.3** SPEN is committed to achieving NNL of biodiversity across all its projects at a business-wide level and to achieving BNG based on the relevant legislation and policy under which projects are delivered across its license areas in Scotland, England and Wales. To deliver this commitment, in 2022, SPEN reached agreement with Scottish and Southern Electricity Networks (SSEN) to use the latter's Optioneering and Biodiversity Toolkits[2] for projects being brought forward within the SPT license area.

**1.4** SPEN considers its commitment to BNG (NNL) addresses the requirements of National Planning Policy Framework 4 (NPF4)[3], in the absence of statutory guidance, particularly in relation to the following NPF4 policies:

- **Policy 1** is relevant to all developments: *When considering all development proposals significant weight will be given to the global climate and nature crises.*
- **Policy 3** Biodiversity seeks to protect biodiversity, reverse biodiversity loss, deliver positive effects from development and strengthen nature networks. It states:
  - *a. Development proposals will contribute to the enhancement of biodiversity, including where relevant, restoring degraded habitats and building and strengthening nature networks and the connections between them. Proposals should also integrate nature-based solutions, where possible.*
  - *a. Development proposals for national or major development, or for development that requires an Environmental Impact Assessment will only be supported where it can be demonstrated that the*

[1] LUC, July 2024. 400kV OHL ZV Diversion – Environmental Appraisal Report.
[2] SSEN Biodiversity Net Gain Optioneering and Biodiversity Toolkit. Available at: Biodiversity Net Gain | SSE Renewables [Accessed 19/06/24]
[3] Scottish Government (2024). National Planning Framework 4. Available at: National Planning Framework 4 - gov.scot (www.gov.scot) [Accessed 19/06/24]

*proposal will conserve, restore and enhance biodiversity, including nature networks so they are in a demonstrably better state than without intervention. This will include future management. To inform this, best practice assessment methods should be used.*

- *c. Proposals for local development will include appropriate measures to conserve, restore and enhance biodiversity, in accordance with national and local guidance. Measures should be proportionate to the nature and scale of development.*
- *d. Any potential adverse impacts, including cumulative impacts, of development proposals on biodiversity, nature networks and the natural environment will be minimised through careful planning and design. This will take into account the need to reverse biodiversity loss, safeguard the ecosystem services that the natural environment provides, and build resilience by enhancing nature networks and maximising the potential for restoration.*

**1.5** It is LUC's understanding that the SPEN will complete the Biodiversity Toolkit post-development calculations to establish total Biodiversity Units (BU) lost, which will subsequently inform an appropriate Biodiversity Enhancement Plan (BEP) to offset the loss of habitats as a result of the Proposed Development.

## Proposed Development

**1.6** The Proposed Development is comprised of the removal of two existing towers (and associated overhead line (OHL) conductors) from the existing 400kV Scotland to England interconnector (known as the ZV route) and replacement with three new installed towers and associated overhead line conductors between the towers to maintain a continuous connection.

**1.7** The Proposed Development is located wholly within the administrative boundary of South Lanarkshire Council and covers a distance of approximately 1.1km (as shown in **Appendix A, Figure 1.1**) of the existing ZV route at Redshaw, circa 3.5km south east of Douglas, South Lanarkshire. The section of the ZV route subject of the Proposed Development is located between the M74 and B7078, north east of the vacant Red Moss Hotel. The Proposed Development will comprise the following:

- Upgrades to the foundations of two existing ZV route towers (ZV108 and ZV111) and (subject to ground investigation) an upgrade of the tower arms of both ZV108 and ZV111 at the existing locations with removal of old and installation of new associated conductors;
- Removal of two existing ZV route towers (ZV109 and ZV110) and associated conductors;
- Installation of three new L8c towers at ZV109R, ZV110A, ZV110B and associated conductors and foundation works; and
- Approximately 90m downleads to Gantry structures within the Redshaw substation. The Proposed Development will be operational for a temporary period of three years with a temporary alignment between towers ZV110A and ZV110B. The downlead connections to the gantry will only be constructed once the proposed Redshaw substation is constructed and prior to the substation being brought into operation. The temporary alignment between ZV110A and ZV110B will then be removed; and
- Temporary construction access tracks.

**1.8** An overview of the Proposed Development is provided in **Chapter 2: Project Description** of the EAR[1] which also includes figures showing the proposed alignment.

## Supporting Documents

**1.9** This document should be read in conjunction with the 400kV OHL ZV Diversion EAR[1]. This includes a full description of the Proposed Development and the ecological baseline data that forms the basis of this BNG assessment.

# Chapter 2
# Methodology

## Phase 1 Habitat Survey

**2.1** A Phase 1 Habitat Survey was completed by an experienced ecologist in accordance with JNCC methodology[4] on 17th August 2023 in warm, sunny and dry weather conditions. The Phase 1 survey technique provides a rapid and standardised approach to documenting, classifying and mapping habitats. The Study Area[5] adopted for the phase 1 habitat survey included the locations of the proposed infrastructure as outlined above (including wayleaves) and a buffer of 250m. The results of the phase 1 habitat survey[1] provided the baseline data to inform the calculations within the SSEN Optioneering and Biodiversity Toolkit, as discussed further below.

## A Metric Approach to BNG

**2.2** The Biodiversity Metric (version 4.0)[6] has been developed by the Department for Environment Food and Rural Affairs (Defra) for BNG, and its application to development projects is now mandatory in England. Although BNG has not formally been adopted in Scotland, SSEN has reviewed and adapted earlier versions of the Defra metric to enable it to be used for its development projects in Scotland. The SSEN Optioneering and Biodiversity toolkit yields the biodiversity units that a site's land is 'worth', based on the type, distinctiveness, extent, and condition of the habitats within it. The toolkit approach can compare the pre-development baseline against the project proposals, accounting for any habitat loses, gains, impacts and enhancements.

**2.3** Calculations have been carried out in cognisance of Biodiversity Net Gain: Good Practice Principles for Development guidance[7] and the British Standards Institute[8],[9]. Full calculations were undertaken through the SSEN Biodiversity Project Toolkit[10] and condition sheets associated with the Biodiversity Metric 4.0[6].

**2.4** While the SSEN toolkit is the approach taken by SPEN to calculate BNG, it should not be considered a complete tool in assessing BNG, and therefore professional judgement has been used where appropriate. Where professional judgement has been used, this is outlined in the text and additional references, where required, are provided.

**2.5** The BNG assessment has been undertaken by Helen Embleton BSc (Hons) MEnvSc and overseen by Steve Jackson-Matthews CEnv MCIEEM MEECW.

## Baseline Calculation

**2.6** To calculate the ecological baseline units for the Study Area the following data and assessments were collated:

[4] JNCC (2010). Handbook for Phase 1 habitat Survey- A Technique for Environmental Audit. Available at: Handbook for Phase 1 habitat survey (jncc.gov.uk) [Accessed 19/06/24]
[5] Ecological Study Areas are defined in Chapter 4: Environmental Appraisal Report.
[6] Natural England (2023) The Biodiversity Metric 4.0. Available at: https://publications.naturalengland.org.uk/publication/6049804846366720. [Accessed May 2024]
[7] Biodiversity Net Gain (2019) Good practice principles for development. A Practical Guide. CIEEM, CIRIA, IEMA.
[8] BSI (2021). BS 8683:2021, Process for designing and implementing Biodiversity Net Gain – Specification. British Standards Institute, London.
[9] BSI (2013). Biodiversity – code of practice for planning and development.
development, BS 42020:2013. British Standards Institution, Bristol.
[10] Scottish & Southern Electricity Networks (2023). Biodiversity Net Gain Project Toolkit User Guide. V3.1.

- The area (hectares) of each habitat and length of linear habitats (m) within the Study Area was calculated from Phase 1 Habitat mapping using ESRI ArcMap. The Phase 1 Habitat Map, is presented in **Appendix A, Figure 4.2**.
- Each habitat area was then assigned a pre-set distinctiveness value, indicative of the inherent 'value' of these habitats.
- Habitats recorded within the Study Area were subject to a 'Condition Assessment', undertaken in the field. The condition of a habitat is considered to be a measure of its quality and measures its 'working-order' against the optimal potential for the habitat type. Assessment criteria cover broad habitat types, therefore further clarification is provided and professional judgement used to assign condition where appropriate, using Defra condition sheets and associated guidance[7].
- Each habitat was subject to a 'Strategic Significance' assessment based on its position within the landscape. This includes consideration of local plans, Supplementary Planning Documents and Guidance and local partnership publications to identify local priorities for targeting biodiversity. The documents referred to are detailed in the EAR[1].

## Proposed Development

**2.7** The same process was repeated for the Proposed Development, as detailed below:

- The loss of baseline habitats (both polygon and linear data) was calculated by overlaying the footprint of the Proposed Development onto the Phase 1 Habitat Mapping using ESRI ArcMap. Using this method, the area of loss to each habitat block was determined.

**2.8** Due to the constrained nature of the Proposed Development, SPEN are considering the potential for off-site compensation to meet their NNL target. As such, there are currently no detailed biodiversity restoration or enhancement proposals for the Proposed Development, however later chapters of this report provide several examples of options for restoration & enhancement measures. Post-development proposals will be drawn up and entered into the toolkit following consent.

## Data Summary and Discussion

**2.9** The results of the SSEN Biodiversity Project Toolkit are presented as a summary of the resultant biodiversity unit change, separated by habitat type.

**2.10** It is important to note that the process of BNG should consider habitat types in isolation, and any unit losses or gains must be considered in detail on a like-for-like basis for each habitat group / priority habitat type. This is referred to as "trading rules"[10], which set minimum habitat creation and enhancement requirements to compensate for specific habitat losses.

# Chapter 3
# Biodiversity Net Gain Calculations

## Baseline Assessment Inputs

**3.1** The Study Area was dominated by improved and marshy grassland which was subject to grazing. Habitats present to a lesser extent included small areas of coniferous plantation woodland, dry dwarf shrub heath, hard standing and amenity grassland. The Study Area also included several small open field drains.

**3.2** **Table 3.1** provides a summary of the pre-development baseline assessment inputs for area-based and linear habitats. Full condition assessment proformas are provided in **Appendix B.**

**Table 3.1 Summary of Pre Development Baseline Assessment Inputs.**

| JNCC Phase 1 Classification | Distinctiveness | Condition | Connectivity | Area (Ha) / Length (m) |
|---|---|---|---|---|
| **Area** | | | | |
| A1.2.2 Coniferous woodland (plantation) | Low | Poor | Medium | 0.631 |
| B4 Improved grassland / B5 Marshy grassland | Low | Fairly Poor | Low | 11.691 |
| B4 Improved grassland | Low | Fairly Poor | Low | 42.352 |
| B5 Marshy grassland / B4 Improved grassland | Low | Poor | Low | 3.001 |
| B5 Marshy grassland | Low | Fairly | Low | 11.327 |
| D1 Dry dwarf shrub heath / B4 Improved grassland | Low | Poor | Low | 1.586 |
| HS Hard standing | Very low | N/A – no biodiversity value | Low | 0.566 |
| J1.2 Amenity grassland | Low | Poor | Low | 0.212 |
| **Area Total (Ha)** | | | | **71.356** |
| Linear | | | | |
| G2 Running water | Low | Poor | Low | 2122.002 |
| J2.5 Wall | Very low | Poor | low | 520.471 |
| **Linear total (m)** | | | | **2642.471** |

**3.3** The Study Area biodiversity value as calculated by the Optioneering and Biodiversity Toolkit[2] comprises a total of 207.46 BU (Area), and 4,244.00 watercourse units (W).

**3.4** The pre-development outcome of the BNG assessment of BU's is summarised below:

- A total of 207.46BU, mainly comprised of:
  - 1.386BU (0.67%) Coniferous plantation.
  - 173.81BU (83.78%) Improved grassland.
  - 28.66BU (13.81%) Marshy grassland
  - 3.18BU (1.53%) Dry dwarf shrub heath
  - 0.42BU (0.20%) Amenity grassland

**3.5** A full breakdown of the biodiversity value of the Survey Area is provided in the BPT under the 'Unit Calculation' tab of the Optioneering and Biodiversity Toolkit.

## Proposed Development Assessment Inputs

**3.6** **Table 3.2** below provides a summary for retained area-based and linear habitats within the Study Area (i.e. those habitats unaffected by the Proposed Development).

**Table 3.2 Retained Area & Linear Habitats**

| Habitat Type (Phase 1 Habitat) | Condition | Baseline (ha/m) | Retained (ha/m) | % Retained |
|---|---|---|---|---|
| Area | | | | |
| A1.2.2 Coniferous woodland (plantation) | Poor | 0.631 | 0.631 | 100% |
| B4 Improved grassland / B5 Marshy grassland | Fairly Poor | 11.691 | 11.691 | 100% |
| B4 Improved grassland | Poor | 42.352 | 42.349 | 99.993% |
| B5 Marshy grassland / B4 Improved grassland | Poor | 3.001 | 2.991 | 99.986% |
| B5 Marshy grassland | Fairly Poor | 11.327 | 11.317 | 99.986% |
| D1 Dry dwarf shrub heath / B4 Improved grassland | Fairly Poor | 1.586 | 1.586 | 100% |
| HS Hard standing | N/A – no biodiversity value | 0.566 | 0.566 | 100% |
| J1.2 Amenity grassland | Poor | 0.212 | 0.212 | 100% |
| **Linear** | | | | |
| G2 Running water | Poor | 2122.002 | 2122.002 | 100% |
| J2.5 Wall | Poor | 520.471 | 520.471 | 100% |

## Change in Biodiversity Units

**3.7** The Proposed Development, in the absence of compensation and enhancement, will result in a loss of **0.13** biodiversity units of combined area-based and linear habitat. **Table 3.3** provides a summary of the toolkit output.

**Table 3.3 Summary of Toolkit Output**

| Phase 1 Habitat | Total Area (ha) | Condition | Permanent Works Area (ha) | Temporary Works Area (ha) | Biodiversity Units – Retained | Biodiversity Units – Removed |
|---|---|---|---|---|---|---|
| Area | | | | | | |
| A1.2.2 Coniferous woodland (plantation) | 0.631 | Poor | 0.000 | 0.000 | 1.386 | 0.000 |
| B4 Improved grassland / B5 Marshy grassland | 11.691 | Fairly Poor | 0.000 | 0.000 | 46.760 | 0.000 |
| B4 Improved grassland | 42.352 | Fairly poor | 0.003 | 0.027 | 127.050 | 0.090 |
| B5 Marshy grassland / B4 Improved grassland | 3.001 | Poor | 0.001 | 0.009 | 5.980 | 0.020 |
| B5 Marshy grassland | 11.327 | Poor | 0.001 | 0.009 | 22.640 | 0.020 |
| D1 Dry dwarf shrub heath / B4 Improved grassland | 1.586 | Poor | 0.000 | 0.000 | 3.180 | 0.000 |
| HS Hard standing | 0.566 | N/A – no biodiversity value | 0.000 | 0.000 | 0.000 | 0.000 |
| J1.2 Amenity grassland | 0.212 | Poor | 0.000 | 0.000 | 0.420 | 0.000 |
| **Linear** | | | | | | |
| G2 Running water | 2122.002 | Poor | 0.000 | 0.000 | 4244.000 | 0.000 |
| J2.5 Wall | 520.471 | Poor | 0.000 | 0.000 | 0.000 | 0.000 |

# Chapter 4
# Results and Interpretation

## Biodiversity Net Gain Results

**4.1** The Study Area was dominated by improved grassland and marshy grassland habitats. Several smaller areas of coniferous woodland, dwarf shrub heath, hard standing and amenity grasslands were also present within the Study Area. All habitats were assessed to be of poor or fairly poor condition, with low or very low distinctiveness and of low connectivity and strategic importance. These indicators confirm that the area of the Study Area is of limited ecological value.

**4.2** The majority of the habitats within the Study Area will be retained. However, the Proposed Development will unavoidably result in the loss of a very small area of improved and marshy grassland.

**4.3** The preliminary BNG assessment using the optioneering and biodiversity Toolkit[2] of the Proposed Development shows that in the absence of compensation, there will be a loss of 0.13 Biodiversity Units, which is a Biodiversity Net Loss of 0.063% from the baseline value of the Study Area. The Proposed Development will retain the linear habitat units within the Study Area.

## Achieving No Net Loss

**4.4** To ensure that the Proposed Development achieves SPEN's internal NNL policy, and therefore NPF4's requirements for biodiversity enhancement, it will be necessary to deliver habitat creation and enhancement measures, either on or off-site, via a detailed Biodiversity Enhancement Plan (BEP).

**4.5** The BEP will be prescribed to ensure that newly created, retained and enhanced habitats continue to benefit the habitats and species and provide connectivity to the wider landscape long into the future.

**4.6** NNL, could easily be achieved via the introduction of small compensatory habitats such as a small area of higher quality grassland or native shrub planting around the plantation woodland.

**4.7** The final level of commitment provided through the BEP will require to be proportionate to the impact of the proposals.

**4.8** Crucially, the existing levels of protection afforded to protected species and habitat are not changed by use of this or any other metric. Statutory obligations will still need to be satisfied.

# Appendix A
## Figures

# Appendix B

## Condition Assessments

## On Site Baseline Area Condition Assessments

**Table B.1 Coniferous woodland**

| **Condition Sheet: WOODLAND Habitat Type** | | | | | | |
|---|---|---|---|---|---|---|
| **Phase 1 Habitat Type(s)** | | | | | | |
| **Coniferous woodland (plantation) A1.2.2** | | | | | | |
| **Habitat Description** | | | | | | |
| A block of mature coniferous Sitka spruce woodland was recorded in the centre of the Study Area, this is classified as LEPO in the Ancient Woodland Inventory. | | | | | | |
| **Limitations (if applicable)** | | N/A | **Habitat size (ha)** | 0.631 | | |
| **Condition Assessment Criteria** | | | | | | |
| **Indicator** | | **Good (3 points)** | **Moderate (2 points)** | **Poor (1 point)** | **Score per indicator** | **Notes (such as justification)** |
| **A** | **Age distribution of trees** | Three age-classes present. | Two age-classes present. | One age-class present. | 1 | Predominantly mature trees present. |
| **B** | **Wild, domestic and feral herbivore damage** | No significant browsing damage evident in woodland. | Evidence of significant browsing pressure is present in 40% or less of whole woodland. | Evidence of significant browsing pressure is present in 40% or more of whole woodland. | 3 | Little evidence of browsing damage. |

| | | | | | | |
|---|---|---|---|---|---|---|
| **C** | **Invasive plant species** | No invasive species present in woodland. | Rhododendron *Rhododendron ponticum* or cherry laurel *Prunus laurocerasus* not present, other invasive species <10% cover. | Rhododendron or cherry laurel present, or other invasive species >10% cover. | 3 | No invasive species present. |
| **D** | **Number of native tree species** | Five or more native tree or shrub species found across woodland parcel. | Three to four native tree or shrub species found across woodland parcel. | Two or less native tree or shrub species across woodland parcel. | 1 | |
| **E** | **Cover of native tree and shrub species** | >80% of canopy trees and >80% of understory shrubs are native. | 50 - 80% of canopy trees and 50 - 80% of understory shrubs are native. | <50% of canopy trees and <50% of understory shrubs are native. | 1 | The canopy was dominated by non-native Sitka trees. |
| **F** | **Open space within woodland** | 10 - 20% of woodland has areas of temporary open space. Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted. | 21 - 40% of woodland has areas of temporary open space. | <10% or >40% of woodland has areas of temporary open space. But if woodland <10ha has <10% temporary open space, please see Good category. | 3 | No open space was noted. |
| **G** | **Woodland regeneration** | All three classes present in woodland; trees 4 - 7cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth. | One or two classes only present in woodland. | No classes or coppice regrowth present in woodland. | 1 | No evidence of regrowth was observed. |

| | | | | | | |
|---|---|---|---|---|---|---|
| **H** | **Tree health** | Tree mortality less than 10%, no pests or diseases and no crown dieback. | 11% to 25% mortality and/or crown dieback or low-risk pest or disease present[9]. | Greater than 25% tree mortality and or any high-risk pest or disease present[9]. | 3 | Little evidence of tree mortality present. |
| **I** | **Vegetation and ground flora** | Recognisable NVC plant community at ground layer present, strongly characterised by ancient woodland flora specialists. | Recognisable woodland NVC plant community at ground layer present. | No recognisable woodland NVC plant community at ground layer present. | 1 | Few ground layer species observed. |
| **J** | **Woodland vertical structure** | Three or more storeys across all survey plots or a complex woodland. | Two storeys across all survey plots. | One or less storey across all survey plots. | 1 | - |
| **K** | **Veteran trees** | Two or more veteran trees per hectare. | One veteran tree per hectare. | No veteran trees present in woodland. | 1 | - |
| **L** | **Amount of deadwood** | 50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, branch stubs and stumps, or an abundance of small cavities. | Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities. | Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities. | 2 | - |

| | | | | | | |
|---|---|---|---|---|---|---|
| **M** | **Woodland disturbance** | No nutrient enrichment or damaged ground evident. | Less than 1 hectare in total of nutrient enrichment across woodland area and or less than 20% of woodland area has damaged ground. | More than 1 hectare of nutrient enrichment and or more than 20% of woodland area has damaged ground. | 3 | - |
| **Total Score (out of a possible 39)** | | | | | 24 | |
| **Condition Assessment Result** | | | | **Condition Assessment Score** | | **Result Achieved** |
| Total score >32 (33 to 39) | | | | Good (3) | | Poor |
| Total score 26 to 32 | | | | Moderate (2) | | |
| Total score <26 (13 to 25) | | | | Poor (1) | | |
| **Suggested enhancement interventions to improve condition score** | | | | | | |
| | | | | | | |

**Table B.2 Improved Grassland**

| | | | |
|---|---|---|---|
| **Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)** | | | |
| **Phase 1 Habitat Type(s)** | | | |
| **Improved grassland B4** | | | |
| **Habitat Description** | | | |
| Improved grassland was the dominant habitat recorded across the Study Area. This area appears to be either lightly grazed or grown as silage. Ryegrass, Yorkshire fog and sweet vernal grass dominated this habitat. Daisy and white clover were abundant with frequent dandelion and buttercup. Mouse ear and spear thistle were rarely recorded in this habitat. | | | |
| **Limitations (if applicable)** | N/A | **Habitat size (ha)** | |
| | | 54.043 | |
| **Condition Assessment Criteria** | | **Criterion passed (Yes or No)** | **Notes (such as justification)** |
| A | There must be 6-8 species per $m^2$. If a grassland has 9 or more species per m2 it should be classified as a medium distinctiveness grassland habitat type. | No | |

| | | | |
|---|---|---|---|
| | **NB - this criterion is essential for achieving moderate condition** | | |
| B | Sward height is varied (at least 20% of the sward is less than 7cm and at least 20% is more than 7cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed. | No | Grassland was heavily grazed. |
| C | 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. | No | |
| D | 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. | Yes | - |
| E | Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens). | Yes | |
| F | Cover of bracken is less than 20%. | Yes | |
| G | There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). | Yes | |
| **Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)** | | No | |
| **Number of criteria passed** | | 4 | |

| | | | |
|---|---|---|---|
| **Condition Assessment Result (out of 6 criteria)** | **Condition Assessment Score** | **Score Achieved ×/✓** | |

| | | | |
|---|---|---|---|
| Passes 6 or 7 of 7 criteria including passing essential criterion 1. | Good (3) | | |
| Passes 3 – 5 Passes 4 or 5 of 7 criteria including passing essential criterion 1. | Moderate (2) | | |
| Passes 0, 1, 2 or 3 of 7 criteria; OR<br>4, 5 or 6 of criteria (but failing criterion 1) | Poor (1) | Noted as Fairly poor | |
| **Suggested enhancement interventions to improve condition score** | | | |
| | | | |

| **Condition Sheet: HEATHLAND** | | | |
|---|---|---|---|
| **Phase 1 Habitat Type(s)** | | | |
| D1 Dry dwarf shrub heath / B4 Improved grassland | | | |
| Habitat Description | | | |
| A small area of dry dwarf shrub heath/ improved grassland was present within the northwest of the Study Area. This habitat was present on the sloped road verge. Within this habitat, bell heather was locally dominant with a ground cover of grasses including: Yorkshire fog, perennial ryegrass and tufted hairgrass. (See **Appendix 4.1**, **Photo 7** of the EAR). This habitat is frequently associated with peatland. NatureScot's Carbon and Peatland Map indicate that this area is comprised of Class 3 peatland. Peat probing undertaken in the vicinity of this habitat has recorded peat between 0-25cm in depth. Therefore, this small area of dry dwarf shrub heath habitat is not present on peatland. | | | |
| **Condition Assessment Criteria** | | Condition Achieved (Y/N) | Notes/ Justification |
| 1 | The appearance and composition of the vegetation closely matches characteristics of the specific heathland habitat type (see UKHab definition linked above). Indicator shrubs, grasses, herbs and lower plants for the specific heathland habitat type are very clearly and easily visible.<br>**NB - this criterion is essential for achieving good condition.** | *No* | |

| | | | |
|---|---|---|---|
| 2 | There are at least two dwarf shrub species frequent, and cover of dwarf shrubs is between 25-75% for Lowland heathland, 50-75% for upland dry heath, or >20% for upland wet heath.<br>**NB - this criterion is essential for achieving good condition.** | No | |
| 3 | All age classes (pioneer, degenerate and mature) present with at least 10% pioneer heather in the lowlands or at least 10% degenerate/mature in the uplands.<br>**NB - this criterion is essential for achieving good condition.** | No | |
| 4 | Unshaded bare ground is between 1-10%.<br>**NB - this criterion is essential for achieving good condition.** | Yes | |
| 5 | No signs disturbance of sensitive areas[1], including managed burns. | No | |
| 6 | No more than 33% of heather shoots should be grazed, or flowering heather plants are at least frequent in autumn. | No | |
| 7 | There is an absence of invasive non-native species listed on Schedule 9 of WCA, 1981, or shallon *Gaultheria shallon*, and there is less than 5% cover of bracken *Pteridium aquilinum*[2]. | Yes | |
| 8 | Cover of scattered trees and/or scrub[3] should be less than 20% for upland heaths; less than 15% for lowland dry heaths; and less than 10% for lowland wet heaths. | Yes | |
| 9 | No signs of any damaging activites[4] or contamination to the habitat such as: artificial drains, peat extraction, silt, leachate or eutrophication. | Yes | |
| Essential criteria for achieving good condition 1-4 achieved (Y/N) | | | 1 |
| Number of criteria passed | | | 4 |
| Condition Assessment Result | Condition Assessment Score | Score Achieved ×/✓ | |
| Passes 8 or 9 of 9 criteria including all essential criteria 1-4 | Good (3) | | |
| Passes 6 or 7 of 9 criteria; OR Passes 8 of 9 criteria excluding any of the essential criteria 1-4 | Moderate (2) | | |
| Passes 0, 1, 2, 3, 4 or 5 of 9 criteria | Poor (1) | Poor | |

N.B. Conditions were noted on site as Poor for marshy grassland and amenity grassland habitats.

**No condition assessment required for hard standing. Condition fixed at Poor.**

## On Site Baseline Linear Condition Assessments

| **Condition Sheet: DITCH Habitat Type** | | | |
|---|---|---|---|
| **Phase 1 Habitat Type(s)** | | | |
| G2 Running Water - Eutrophic | | | |
| **Habitat Description** | | | |
| The southeast of the Study Area also included a narrow field drain that was largely covered by overhanging vegetation dominated by soft rush. In places the vegetation around the channel was more open and exposed small pools of slower moving water.<br>The north of the Study Area included a mosaic of marshy grassland and improved grassland, there were several small field drains and a small water course present in this area<br>Both of these areas were heavily influenced by grazing. | | | |
| **Limitations (if applicable)** | | **Linear length (m)** | 2122.0 |
| **Condition Assessment Criteria** | | **Condition Achieved (Y/N)** | **Notes/Justification** |
| 1 | The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. | Y | Surface of ditch visible |
| 2 | A range of emergent, submerged and floating leaved plants are present. As a guide >10 species of emergent, floating or submerged plants in a 20m ditch length. | N | No submerged or floating plants recorded |
| 3 | There is less than 10% cover of filamentous algae and/or duckweed (these are signs of eutrophication). | Y | |
| 4 | A fringe of marginal vegetation is present along more than 75% of the ditch. | N | |
| 5 | Physical damage evident along less than 5% of the ditch, such as excessive poaching, damage from machinery use or storage, or any other damaging management activities. | N | |
| 6 | Sufficient water levels are maintained; as a guide a minimum summer depth of approximately 50cm in minor | N | |

| | | | |
|---|---|---|---|
| | ditches and 1 m in main drains. | | |
| 7 | Less than 10% of the ditch is heavily shaded. | N | Heavily shaded by willow and alder |
| 8 | There is an absence of non-native plant and animal species[1]. | Y | |
| | | **Number of criteria passed** | **3** |

| **Condition Assessment Result** | **Condition Assessment Score** | **Score Achieved ×/✓** |
|---|---|---|
| Passes 8 of 8 criteria | Good (3) | |
| Passes 6 or 7 of 8 criteria | Moderate (2) | |
| Passes 0, 1, 2, 3, 4 or 5 of 8 criteria | Poor (1) | 3 |