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Biodiversity Net Gain Strategy

Dubbers Turbines
St Austell, Cornwall

November 2025

A report by

James Gilroy BSc (Hons), MSc – Senior Ecologist

## Report details

Site address:                Dubbers Restoration Site, St. Austell, Cornwall
Grid reference:           SW975562
Report date:              7th November 2025
Report author:            James Gilroy BSc (Hons), MSc
Report reviewer:         Colin Hicks BSc (Hons), MCIEEM

Report reference:        WOR 5779

## Declaration of compliance

### Code of Professional Conduct

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

| Document history | Date | Reviewer |
|---|---|---|
| V1 | 07/11/2025 | CDH |

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# 1. Introduction

## 1.1. Background

Western Ecology has been commissioned to complete a Biodiversity Net Gain calculation for two proposed wind turbines with associated infrastructure. This report is to be read in conjunction with the accompanying Defra Statutory Biodiversity Net-gain metric (Dubbers BNG Assessment, dated 07/11/2025).

This report includes the BNG calculations for this site on which these calculations are based, as detailed in Maps 1 and 2.

This is a draft strategy and may need to be updated once the mitigation requirements for birds are finalised and informed by the completed survey effort.

# 2. Methodology

A Preliminary Ecological Appraisal of the wider site areas was completed by Yolande Knight PhD, MRSB on 11th June 2025 in suitable weather conditions.

## 2.1. Classification of habitats

The existing habitats were classified using the Phase 1 Habitat Survey methodology developed by the Joint Nature Conservation Committee (JNCC, 2010) and modified by the Institute of Environmental Assessment (IEA, 1995). The main plant species were recorded and broad habitat types mapped according to both the Phase 1 Habitat Survey methodology, and the UK Habitats Classification definitions (UK Habitat Classification Working Group, 2018). Plant species were identified according to Stace (1997).

## 2.2. Mapping and condition of baseline habitats

On-site baseline habitats include all habitats within the permanent development footprint, delineated by the red line boundary. Habitats were characterised as described above and mapped using a combination of OS background mapping and aerial imagery. Habitat condition has been determined using the Habitat condition assessment sheets (as defined by the Biodiversity Net Gain Metric (JP039)[1] ). Professional judgement was used to make condition assessments of habitats, when applicable. Baseline habitats are detailed in Section 3.2

Baseline habitats are depicted in Map 1. The details of condition assessment for each habitat parcel are provided in the accompanying spreadsheet titled 'Dubbers Condition Assessment 07/11/2025.

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[1] http://publications.naturalengland.org.uk/publication/6049804846366720

## 2.3. Mapping of proposed development and associated habitats

The proposed development layout was provided in shapefile format and overlaid on the original PEA OS baseline map using QGIS 3.16.10 and OSGB 1936 / British National Grid as the project Coordinate Reference System (CRS).

Proposed habitats, including any enhancements, are depicted in Map 2.

*Limitations in relation to mapping of areas and lengths, and BNG calculations:*
NB: there may be small variations between proposed site plans, OS base maps and habitat areas/lengths due to differences in projections. GIS mapping for BNG was taken to OS baseline boundaries, and the habitat areas scaled to fit the final site plan figures.

## 2.4 Mitigation hierarchy

The mitigation hierarchy requires the delivery of biodiversity measures within the mitigation hierarchy, showing that the process has been followed, and the hierarchy applied for each habitat type/parcel of habitat. Use of the hierarchy enables the developer to reach the best possible outcome for biodiversity gain.

## 2.5. Biodiversity Net Gain calculation

This calculation uses the Defra Statutory metric utilising the guidance, technical supplements and habitat condition assessment sheets provided by Natural England, and following CIEEM Biodiversity Net Gain: Good practice principles for development (2016). Areas are measured in ha and lengths in km and rounded up/down to three decimal places prior to input into the metric.

Areas have been taken directly from shapefiles provided by the developer within which hedgerows have been mapped as areas.

Within the metric, habitat units are entered as areas, but hedgeline units are given linear dimensions. To allow an accurate calculation of BNG as it will be in real-life, the extent of habitat units within the metric has not been increased to compensate for the effects associated with hedgelines being assessed as linear features.

Strategic Significance
Strategic significance has been determined using Cornwall's Nature Recovery Network mapping tool[2]. The mapping tool identifies the areas that are formally identified in local strategy and for which the strategic significance multiplier will apply. These zones are:

- Zone 1 – Existing Nature Network: includes areas already recognised as ecologically valuable such as statutory and non-statutory nature conservation sites and irreplaceable habitats (such as ancient woodland and veteran trees);

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[2] The Cornwall and Isles of Scilly Nature Recovery Network Map. Available at
https://experience.arcgis.com/experience/0f354c9cacab4d52a10a719e0b6503b5/page/Map/

- Zone 2 – Nature Recovery Opportunity Areas: includes priority habitats which are not currently designated and should be retained or restored as part of any development, areas of existing habitat which can be restored or enhanced to provide greater benefits to wildlife, as well as areas which could be suitable for new and targeted habitat creation.

In this assessment, the Assessment Site lies within a Zone 2 opportunity area (for Heath and Moor Mosaics). However, as this project doesn't deliver actions for either of these habitat types that Site is regarded as <u>low strategic significance</u>, as per BNG guidelines[3]

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[3] The Statutory Biodiversity Metric – User Guide, July 2025.

# 3. Biodiversity Net Gain Summary Figures

## 3.1. Principles of net gain

Table 1. Ten principles setting out good practice for achieving Biodiversity Net Gain[4] have been applied as follows:

| Principles | Principle met? | Comments |
|---|---|---|
| Utilise the mitigation hierarchy to minimise impact on biodiversity | Yes | No valued habitats to be lost. |
| Eliminate negative impacts on biodiversity that cannot be offset elsewhere | Yes | Realistic potential for net gain to be met within the off-site areas associated with the Site. |
| Involve all pre-development and post-development stakeholders in forming mandatory net gain solutions | Yes | Landowners and LPA involved. No other realistic stakeholders |
| Understand the potential risks and variable factors to achieving biodiversity net gain | Yes | Risks involved with habitat management minimised: realistic habitat types and condition enhancements proposed |
| Determine a suitable method to secure measurable net gains for biodiversity | Yes | To be provided in a management plan via monitoring regime and a suitable agreement for offsite net gain requirements |
| Ensure the best possible outcomes from biodiversity net gain | Yes | Realistic potential for net gain within the Site, with >10% gain to be achieved for area habitats. |
| Offer nature conservation that exceed the BNG requirements | Yes | Potential for >10% gain to be achieved for area habitats. |
| Focus on generating long-term environmental benefits from biodiversity net gain | Yes | Proposed habitats can realistically be managed for the long-term |
| Cover all areas of sustainability, incorporating economical and societal factors | Yes | Proposed habitats enhance the environment for people and local wildlife. |
| Communicate all BNG proposals in a transparent and timely manner to all relevant stakeholders | Yes | BNG assessment clearly outlined in report format and made available to stakeholders. Stakeholders engaged during the BNG assessment. |

## 3.2 Baseline habitats

The on-site baseline habitats that are contained within the Site are detailed below in Tables 2 & 3. Baseline habitats are shown in Map 1 and associated condition assessments are contained in Appendix 2.

Table 2. On-site baseline habitats

| Habitat category/type | Area (Ha) | Condition | Comments |
|---|---|---|---|
| Urban: artificial unvegetated, unsealed surface | 2.12 | N/A – Other | Total area of unvegetated bare ground comprising bare ground and bunded aggregates. |
| Urban: vacant or derelict land | 0.238 | Moderate | Total area of long-term deposited spoil. Moderate condition as passes 2 criteria. |
| Urban: artificial unvegetated, unsealed surface | 0.526 | N/A – Other | Total area of  existing haul roads. |
| Grassland: modified grassland | 2.179 | Poor | Total area of restoration grassland. Poor condition due to failing essential criterion 1. |
| Grassland: modified grassland | 0.727 | Poor | Total area of modified grassland (with ruderals/ephemerals). Poor condition due to failing criterion 1. |
| Grassland: other neutral grassland | 0.754 | Poor | Total area of neutral grassland. Poor condition due to failing criterion 1. |
| Heathland and shrub: mixed scrub | 0.432 | Moderate | Total area of mixed scrub. Moderate condition as passes 3 criteria. |

Table 3. On-site baseline hedgerows

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[4] https://cieem.net/wp-content/uploads/2019/02/Biodiversity-Net-Gain-Principles.pdf

| Hedgerow ref | Hedgerow category/type | Length (km) | Condition | Comments |
|---|---|---|---|---|
| No hedgerow habitat present | | | | |

## 3.3 Proposed habitat creation

The proposed habitats and hedgerows that will be created within the Site resulting from the proposed development are detailed below in Tables 4 & 5. Proposed habitat creation is detailed in Map 2.

Table 4. Proposed on-site habitats

| Habitat category/type | Area (Ha) | Condition | Comments |
|---|---|---|---|
| Urban: developed land, sealed surface | 0.975 | N/A – Other | Total area of turbine/infrastructure footprint |
| Urban: artificial unvegetated, unsealed surface | 0.195 | N/A – Other | Total area of new access tracks |
| Grassland: modified grassland | 3.926 | Poor | Modified grassland created in remaining disturbed areas. Managed to Moderate condition. |
| Grassland: other neutral grassland | 0.167 | Poor | Linear band of ONG created in place of g4 with ruderals/ephemerals along bank face. Anticipated to meet no more than Poor. |
| Heathland and shrub: mixed scrub | 0.118 | Poor | Limited area of scrub creation in place of existing vacant ground. Anticipated to reach no more than Poor condition due to limited size. |

Table 5. Proposed on-site hedgerows

| Hedgerow ref | Hedgerow category/type | Length (km) | Condition | Comments |
|---|---|---|---|---|
| No hedgerow creation proposed | | | | |

## 3.4. Summary of results

Summary of percentage change and biodiversity net gain in units; detail taken from Defra Statutory Metric, 'Headline Results' sheet. This predicts:

- 11.37% net gain in habitat units (1.50 units)

| Dubbers turbines (2 x vestas 117) | | |
|---|---|---|
| **Headline Results** | Return to results menu | |
| Scroll down for final results ⚠ | | |

| | | |
|---|---|---|
| **On-site baseline** | Area habitat units | 13.24 |
| | Hedgerow units | 0.00 |
| | Watercourse units | 0.00 |
| **On-site post-intervention** (Including habitat retention, creation & enhancement) | Area habitat units | 14.74 |
| | Hedgerow units | 0.00 |
| | Watercourse units | 0.00 |
| **On-site net change** (units & percentage) | Area habitat units | 1.50 | 11.37% |
| | Hedgerow units | 0.00 | 0.00% |
| | Watercourse units | 0.00 | 0.00% |

| | | |
|---|---|---|
| **Off-site baseline** | Area habitat units | 0.00 |
| | Hedgerow units | 0.00 |
| | Watercourse units | 0.00 |
| **Off-site post-intervention** (Including habitat retention, creation & enhancement) | Area habitat units | 0.00 |
| | Hedgerow units | 0.00 |
| | Watercourse units | 0.00 |
| **Off-site net change** (units & percentage) | Area habitat units | 0.00 | 0.00% |
| | Hedgerow units | 0.00 | 0.00% |
| | Watercourse units | 0.00 | 0.00% |

| | | |
|---|---|---|
| **Combined net unit change** (Including all on-site & off-site habitat retention, creation & enhancement) | Area habitat units | 1.50 |
| | Hedgerow units | 0.00 |
| | Watercourse units | 0.00 |
| **Spatial risk multiplier (SRM) deductions** | Area habitat units | 0.00 |
| | Hedgerow units | 0.00 |
| | Watercourse units | 0.00 |

### FINAL RESULTS

| | | |
|---|---|---|
| **Total net unit change** (Including all on-site & off-site habitat retention, creation & enhancement) | Area habitat units | 1.50 |
| | Hedgerow units | 0.00 |
| | Watercourse units | 0.00 |
| **Total net % change** (Including all on-site & off-site habitat retention, creation & enhancement) | Area habitat units | 11.37% |
| | Hedgerow units | 0.00% |
| | Watercourse units | 0.00% |
| **Trading rules satisfied?** | Yes ✓ | |

| Unit Type | Target | Baseline Units | Units Required | Unit Deficit | |
|---|---|---|---|---|---|
| Area habitat units | 10.00% | 13.24 | 14.56 | 0.00 | No additional area habitat units required to meet target ✓ |
| Hedgerow units | 10.00% | 0.00 | 0.00 | 0.00 | No additional hedgerow units required to meet target ✓ |
| Watercourse units | 10.00% | 0.00 | 0.00 | 0.00 | No additional watercourse units required to meet target ✓ |

# 4. Habitat creation, management and targets

All habitat creation and on-going site management will be undertaken by suitably experienced operatives/contractors employed by the site operator for the operational life of the development.

## 4.1 Habitat enhancement

### Grassland – modified grassland

A total of 3.926 ha of modified grassland will be created within the immediate areas adjacent to the turbine footprints. This will be created in place of existing disturbed, unvegetated ground. Habitat creation will typically involve sowing an appropriate seed mixture such as EM2[5] or similar. These grassland areas will be managed as a contiguous unit to meet the criteria detailed below in order to achieve Moderate condition.

Target (30 year objective)

Target habitat condition for this habitat is 'Moderate'. Moderate condition will be achieved through passing the following criteria:

1. There must be 6-8 species per m2. If a grassland has 9 or more species per m2 it should be classified as a medium distinctiveness grassland habitat type.
   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.
2. Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).
3. Cover of bracken less than 20%.
4. There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).

### Grassland – other neutral grassland

A total of 0.167ha of other neutral grassland will be created along the face of a vegetated bank which currently supports modified grassland with ruderals/ephemerals. Habitat creation will typically involve sowing an appropriate seed mixture such as EM3[6] or similar. Existing other neutral grassland areas currently achieve Poor condition, and this newly created parcel will be managed with adjacent areas and is anticipated to achieve no more than Poor condition..

Target (30 year objective)

Target habitat condition for this habitat is 'Moderate'. Moderate condition will be achieved through passing 1 to 2 of the six below criteria:

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

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[5] EM2 – Emorsgate Standard General Purpose Meadow Mixture

[6] EM3 – Emorsgate Special General Purpose Meadow Mixture

type. Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only;

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;
3. Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens;
4. Cover of bracken Pteridium aquilinum is less than 20% and cover of scrub (including bramble Rubus fruticosus agg.) is less than 5%;
5. Combined cover of species indicative of suboptimal condition3 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; and
6. There are 10 or more vascular plant species per m2 present, including forbs that are characteristic of the habitat type. Note - this criterion is essential for achieving Good condition for non-acid grassland types only.

### Heathland and shrub: mixed scrub

A total of 0.118ha of mixed scrub will be created in place of existing modified grassland and vacant/derelict land. This will mostly involve creating glades within the habitat and increasing age diversity through supplementary planting.

It is anticipated that this habitat will achieve no more than Poor condition due to limited size. It will therefore need to consistently achieve 1 to 2 of the below criteria.

Target condition (30 year objective)
Target habitat condition for this habitat is 'Good' and is predicted take 3 years, after which this condition will be maintained for the remainder of the BNG lifetime of 30 years. Good condition will be achieved through passing the following criteria:

1. The habitat represents a good example of its habitat type, with at least 80% cover of native shrubs, at least 3 native woody species and no single species comprising more than 75% cover.
2. Seedlings, saplings, young shrubs and mature shrubs all present within habitat.
3. There is an absence of invasive non-native plant species.
4. The scrub has a well-developed edge, with scattered scrub and tall grassland between scrub and adjacent habitat.
5. There are clearings, glades and rides within the scrub, providing sheltered edges

## 5. Conclusion

Based on the retained, enhanced and created habitats detailed in this report (and shown in Map 2), an overall net-gain of 11.37% for area habitat units is achievable and will align this project with relevant legislation and planning policy.

**western** ECOLOGY

Unit 2
The Workshed
Liskeard Cattle Market
Liskeard,
Cornwall
PL14 4BA

Tel: 0800 622 6828
email: office@westernecology.co.uk

## Legend

— RLB

**UK Habs polygons**

- u1c - artificial unvegetated unsealed surface
- u1b6 - vacant/derelict land
- g3c - other neutral grassland
- g4 - modified grassland
- g4 (81) - modified grassland (with ruderals/ephemerals)
- h3h - mixed scrub
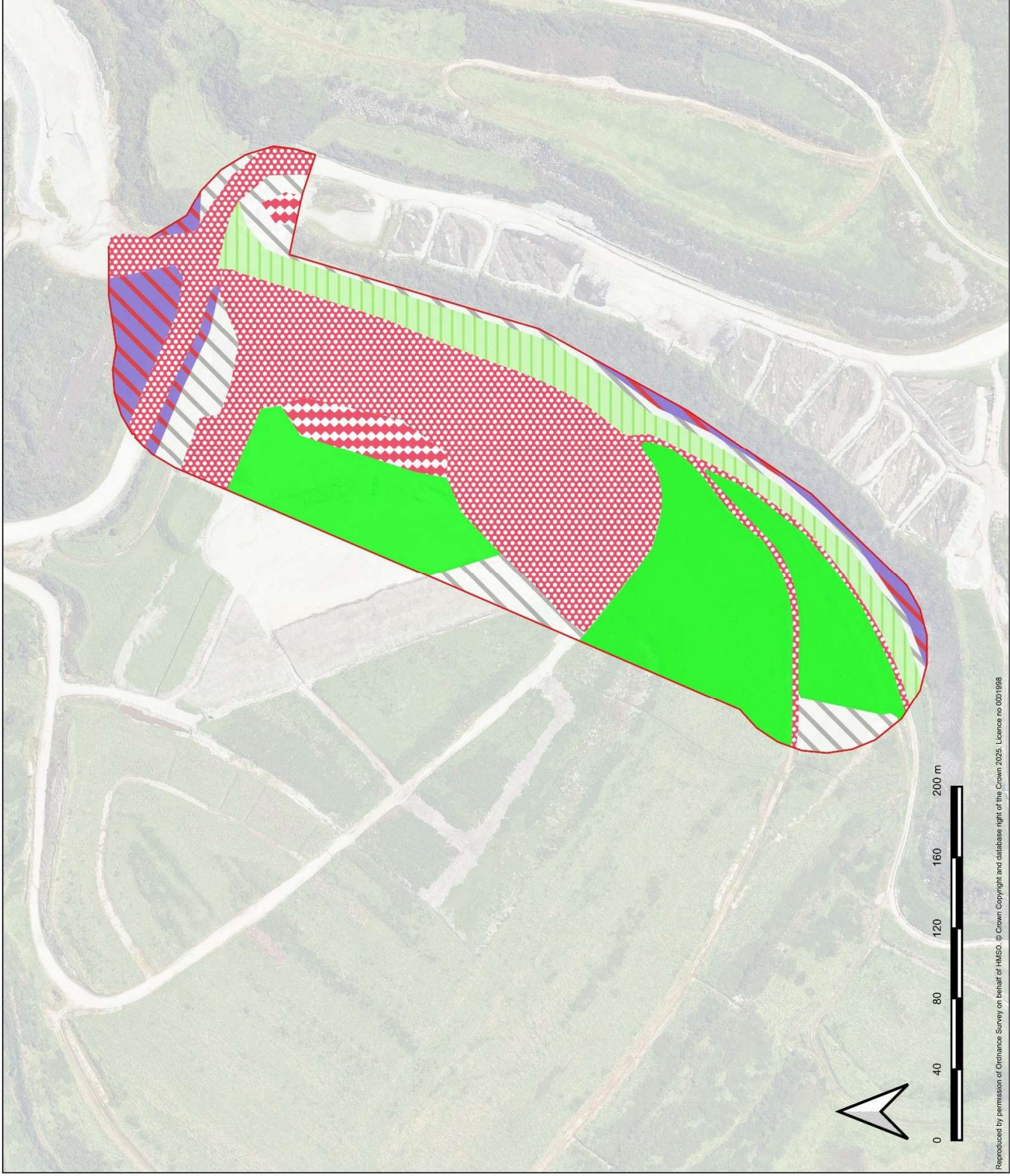
Title: Map 1. Baseline habitats

Project: Dubbers Turbines, Dubbers Restoration Area, Cornwall

Checked by: CDH    Version: 01
Date: 30/10/2025

0    40    80    120    160    200 m

**western** ECOLOGY

Unit 2
The Workshed
Liskeard Cattle Market
Liskeard,
Cornwall
PL14 4BA

Tel: 0800 622 6828
email: office@westernecology.co.uk

## Legend

— Red line boundary

**Post intervention habitats**

g3c - other neutral grassland

g4 - modified grassland

h3 - dense scrub

u1b - developed land, sealed surface

u1c - artificial unvegetated unsealed surface

**Baseline habitats**

g3c - other neutral grassland

g4 - modified grassland

h3 - dense scrub

u1c - artificial unvegetated unsealed surface

g4 (81) - modified grassland (with ruderals/ephemerals)

Title: Map 2. Post intervention habitats

Project: Dubbers Turbines, Dubbers Restoration Area, Cornwall

Checked by: CDH      Version: 01
Date: 30/10/2025

0   40   80   120   160   200 m

Map data: Google Earth, Digital Globe
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