
BIODIVERSITY NET GAIN ASSESSMENT

Esk View Plots, Egton

September 2023



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Second issue	20-09-2023	Giles Manners CEnv MCIEEM

Site:

Esk View Plots
Egton
Whitby
YO21 1UD

Dates:

Site walkover: 11/07/2023

Client:

Mulgrave Estate
Mulgrave Castle
Lythe
Whitby
YO21 3RJ

Local Planning Authority:

North Yorkshire Council – Scarborough District

MAB ref:

2023-1595

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1 Summary

A Biodiversity Net Gain (BNG) metric has been undertaken at Esk View, Egton to accompany a planning application for the construction of residential dwellings.

The site comprises of 0.09ha of land consisting of mostly grassland habitat with a section of existing access track running through the middle.

No irreplaceable habitats will be lost to the development. A total area of 0.0609ha of grassland habitat will be lost to facilitate the creation of the proposed buildings and access; and associated vegetated garden.

A strip of 31m of hedgerow was previously located to the north of the site however was removed prior to the site visit. As this was removed after January 2023 this has been considered as part of the baseline habitats onsite.

Habitat creation will involve the creation of sections of moderate condition other neutral grassland (totalling an area of 0.0028ha) to the south of the site as well as additional strips of modified grassland (poor condition) which will be created on the access track verge in front of the proposed dwellings (0.0120ha). Four urban trees of native species will also be planted onsite. These will be planted as extra heavy standard specimen trees; thus, it is reasonable to assume that at least 1 should achieve a >30cm diameter at breast height after 30 years growth to achieve 'medium tree' classification. Additionally, a total length of 106m of native hedgerow will be planted in front of the proposed dwellings as part of the development.

This habitat creation ensures that the development will achieve a **39.92% net gain in habitat units** and a **57.56% net gain in hedgerow units**. This satisfies local policy and the trading rules of the metric.

2 Introduction

MAB Environment and Ecology Ltd was commissioned by Mulgrave Estate to undertake a Biodiversity Net Gain Assessment to accompany a planning application for construction of dwellings at Esk View, Egton.

The site comprises a parcel of grassland with an existing access track running through the centre. The site is located at OS Grid Ref NZ80980633 and is shown on Figure 1.

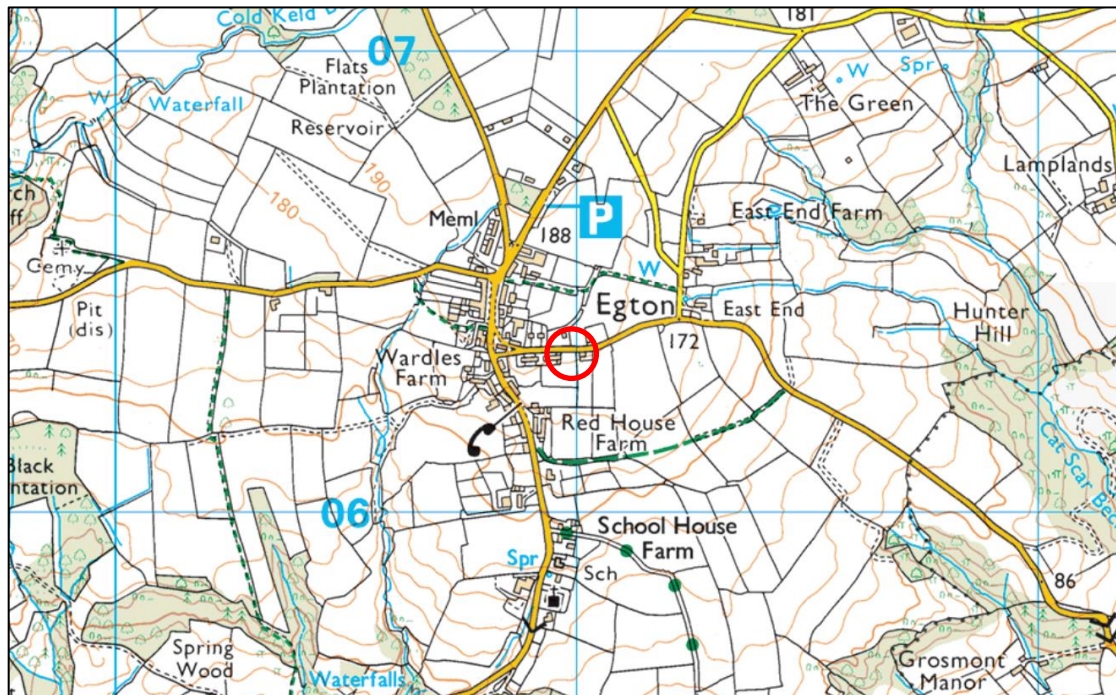


Figure 1: Site location (1:25,000).

The objectives of this report are to:

- Establish baseline conditions on-site.
- Provide habitat baseline plan, and proposed design plans.
- Determine feasibility of the development achieving Biodiversity Net Gain (BNG)

Ecologists from MAB Environment and Ecology Ltd are members of the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow the Institute's Code of Professional Conduct when carrying out ecological work.

3 Methodology

3.1 Desktop study

3.1.1 DEFRA's interactive MAGIC map was used for a baseline assessment of available environmental information of over 300 datasets including Priority Habitats & Species inventories, Designations, Environmental & Historic Landscape Agreements, SSSI impact zones, and Wildlife Licenses.

3.2 Field survey, Mapping, and Metric Calculations

3.2.1 Baseline site surveys were undertaken in July 2023 by Alice Brown and Jordan Brandrick.

3.2.1 Alice Brown is an Ecologist for MAB. She is a qualifying member of CIEEM and has a BSc (Hons) in Ecology and Conservation. She has worked for MAB since the beginning of 2022 and holds a Class Survey Licence CL17 (Bat Survey Level 1) registration number 2023-11025-CL17-BAT.

3.2.2 Jordan Brandrick is an Assistant Ecologist for MAB. She is a qualifying member of CIEEM and holds a BSc (Hons) in Biosciences from the University of Durham.

3.2.3 UK HABS habitat survey of the site was conducted following standard published guidelines (Butcher et al, 2020). This involved a walkover of the site, mapping all habitats present which fell into the appropriate Minimum Mapping Units (MMU). MMU's were decided upon pre survey. Small scale MMU's = Area 25m², linear feature 5m. Species proportions were recorded where possible using the DAFOR scale where D is dominant, A is abundant, F is frequent, O is occasional and R rare. The survey was extended to include records of protected or notable fauna and the habitats were evaluated for their potential to support such fauna. Any invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act were also recorded.

3.2.4 Spatially accurate digital baseline and proposed habitat maps were created using QGIS3. UK Habs symbology was used to show habitat types, and linear features within the site.

3.2.5 OS Survey MasterMap Topography layer[®] were used in conjunction with British National Grid OSG:27700 co-ordinate system to accurately map and obtain pre and post development habitat dimensions. OS MasterMaps re the most detailed and accurate view of Great Britain’s landscapes, with a Stated accuracy of:

- Urban +/- 1m
- Rural +/- 8m

3.2.6 Qfield was used in conjunction with a Stonex UT56 Rugged Tablet for in field data collection and mapping. Stone UT56 uses Global Navigation Satellite System (GNSS) MT6631, GPS, Galileo, GLONASS, and BeiDou to plot accurate area and linear features in-situ.

3.2.7 GPS accuracy was checked prior to on-site mapping using GNSS Status app.

3.2.8 Dream-Haus Limited, 05-2023-1004 (LANDSCAPING) new, Drawing No. 05-2023-1004 was used for proposed habitat creation and layout.

3.2.9 Biodiversity Metric 4.0 was used to determine baseline metric calculations and biodiversity scores post-development.

4 Limitations

There were no limitations regarding survey data or BNG calculations.

5 Baseline ecological conditions

5.1 Current Site conditions

5.1.1 The site consists of 0.09ha of land consisting of mostly grassland habitat with a section of access track (which is to be retained) running through the middle.

5.1.2 The majority of grassland onsite is modified grassland, in a mixture of moderate and poor condition. The areas classified as moderate condition achieved between 6 and 8 species per square meter; these are the areas located in strips beside the existing access track. Species identified include mostly grass species such as meadow foxtail (*Alopecurus pratensis*), perennial ryegrass (*Lolium perenne*), and common bent with areas of ruderal species, such as shepherds' purse (*Capsella bursa-pastoris*), bindweed (*Convolvulus arvensis*), common nettle (*Urtica dioica*), common dandelion (*Taraxacum officinale*), creeping buttercup (*Ranunculus repens*), sorrel (*Rumex acetosa*), and common hawkweed (*Hieracium aurantiacum*).

5.1.3 There is additionally a small section of other neutral grassland to the northwest of the site which has been classified as poor condition as although it achieved over 9 species per square meter and had a variety of herbs present, it is not representative of the UK HABS definition due to the abundance of ruderal species and those indicative of suboptimal condition present.

5.1.4 There is a small line of trees on the eastern boundary of the site – these are to be retained.

5.1.5 There was previously a length of 31m of hedgerow to the north of the site which was removed prior to the site visit however has been considered as part of the baseline due to being removed after January 2020. The hedgerow has not been mapped however included within the metric. Imagery from Google Earth street view from September 2021 was used inform assessment. The condition of the hedgerow has been assessed as moderate condition as it fails conditions C1, C2, and D2. Hawthorn (*Crataegus mongyna*) was the dominant species however bindweed (*Convolvulus arvensis*) is also present.

5.1.6 Site photographs are below. Figure 1 shows the baseline habitats.



Photo 1: East section of grassland. Access track visible.



Photo 2: West section of grassland.



Photo 3: Section of moderate condition modified grassland.



Photo 4: Section of poor condition modified grassland.



Photo 5: TN1 rubble pile.



Photo 6: TN2 wood pile.



Photo 7: TN3 earth mound.

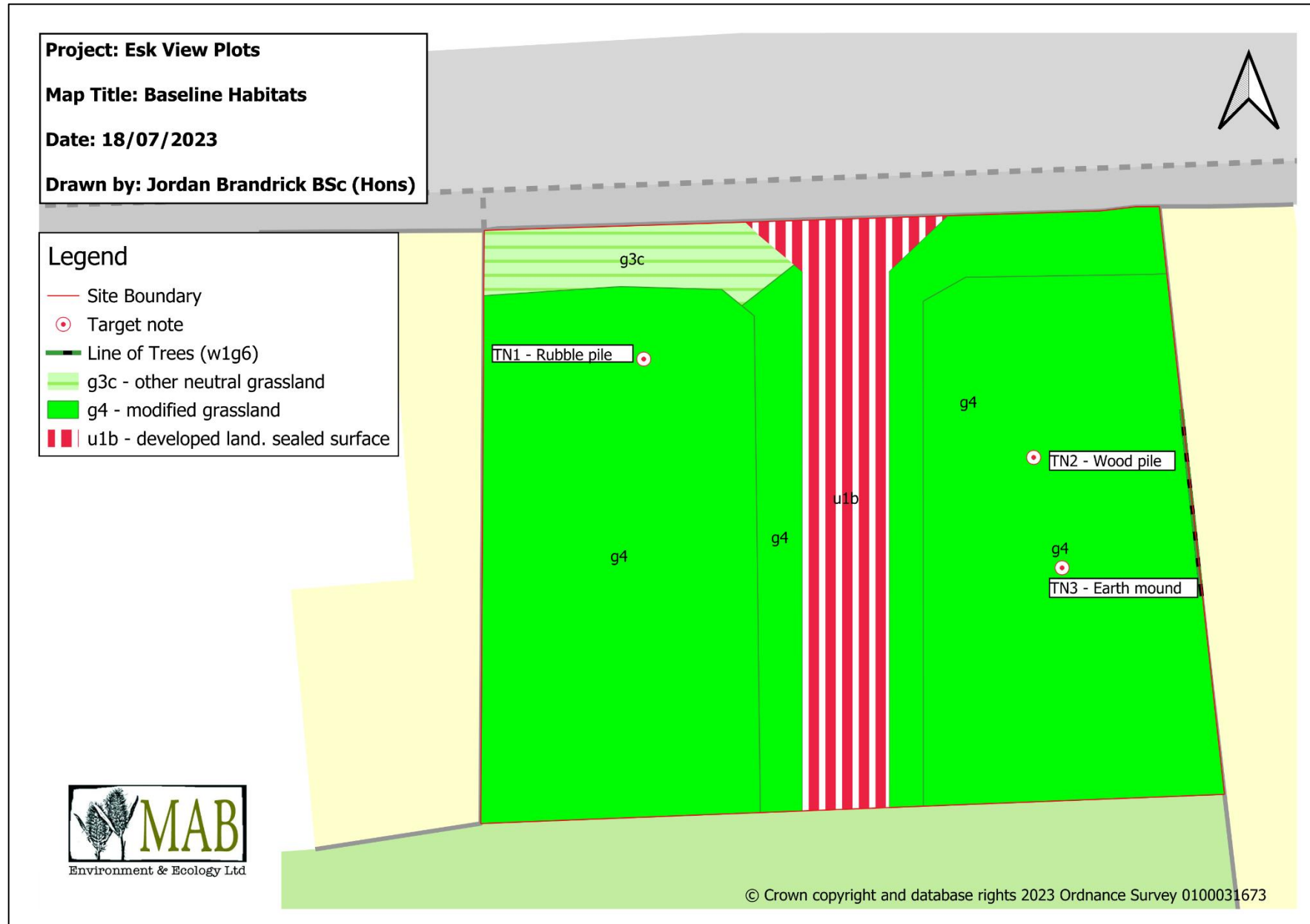


Figure 2: Baseline habitats.

5.2 Baseline metric calculations

Ref	Existing area habitats			Distinctiveness	Condition	Strategic significance	Required Action to Meet Trading Rules	Ecological baseline
	Broad Habitat	Habitat Type	Area (hectares)	Distinctiveness	Condition	Strategic significance		Total habitat units
1	Grassland	Other neutral grassland	0.0039	Medium	Poor	Area/compensation not in local strategy/ no local strategy	Same broad habitat or a higher distinctiveness habitat required	0.02
2	Urban	Developed land; sealed surface	0.0112	V.Low	N/A - Other	Area/compensation not in local strategy/ no local strategy	Compensation Not Required	0.00
3	Grassland	Modified grassland	0.0596	Low	Poor	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required ≥	0.12
4	Grassland	Modified grassland	0.0121	Low	Moderate	Area/compensation not in local strategy/ no local strategy	Same distinctiveness or better habitat required ≥	0.05
5								
			Total habitat area	0.09				0.18
			Site Area (Excluding area of individual trees and Green walls)	0.09				

Figure 3: Baseline area habitat calculations.

Baseline ref	Existing hedgerow habitats			Distinctiveness		Condition		Strategic significance			Required Action to Meet Trading Rules	Ecological baseline Total hedgerow units	Length retained
	Hedge number	Hedgerow type	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier			
1		Line of trees	0.008	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	0.02	0.008
2		Native hedgerow	0.031	Low	2	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	0.12	
3													
4													
5													
6													
			0.04								0.14	0.01	

Figure 4: Baseline hedgerow calculations.

6 Proposed design

6.1.1 The proposed development consists of the erection of two detached residential dwellings with associated garden and access. Landscaping plan for the development is available in Appendix 5.

6.1.2 A total area of 0.0609ha of grassland habitat will be lost to the development. This is to facilitate 0.0271ha of sealed surface which will be created for the proposed buildings and access; and an area of 0.0338ha of vegetated garden which will be created in the area immediately surrounding the buildings.

6.1.3 Two sections of moderate condition other neutral grassland will be created to the south of the development totalling an area of 0.0028ha. These will be species-rich grassland areas (≥ 9 species per m^2), providing resources for pollinators.

6.1.4 Additional strips of modified grassland of poor condition will be created on the access track verge in front of the proposed dwellings. These total an area of 0.0120ha.

6.1.5 Four urban trees will be planted onsite within the proposed grassland areas. These will be planted as extra heavy standard specimen trees; as a result, it is reasonable to suggest that at least 1 should achieve a >30 cm diameter at breast height after 30 years growth to achieve 'medium tree' classification. It is recommended these are native species.

6.1.6 A total length of 106m of hedgerow will be planted in front of the proposed dwellings. Species should be native.

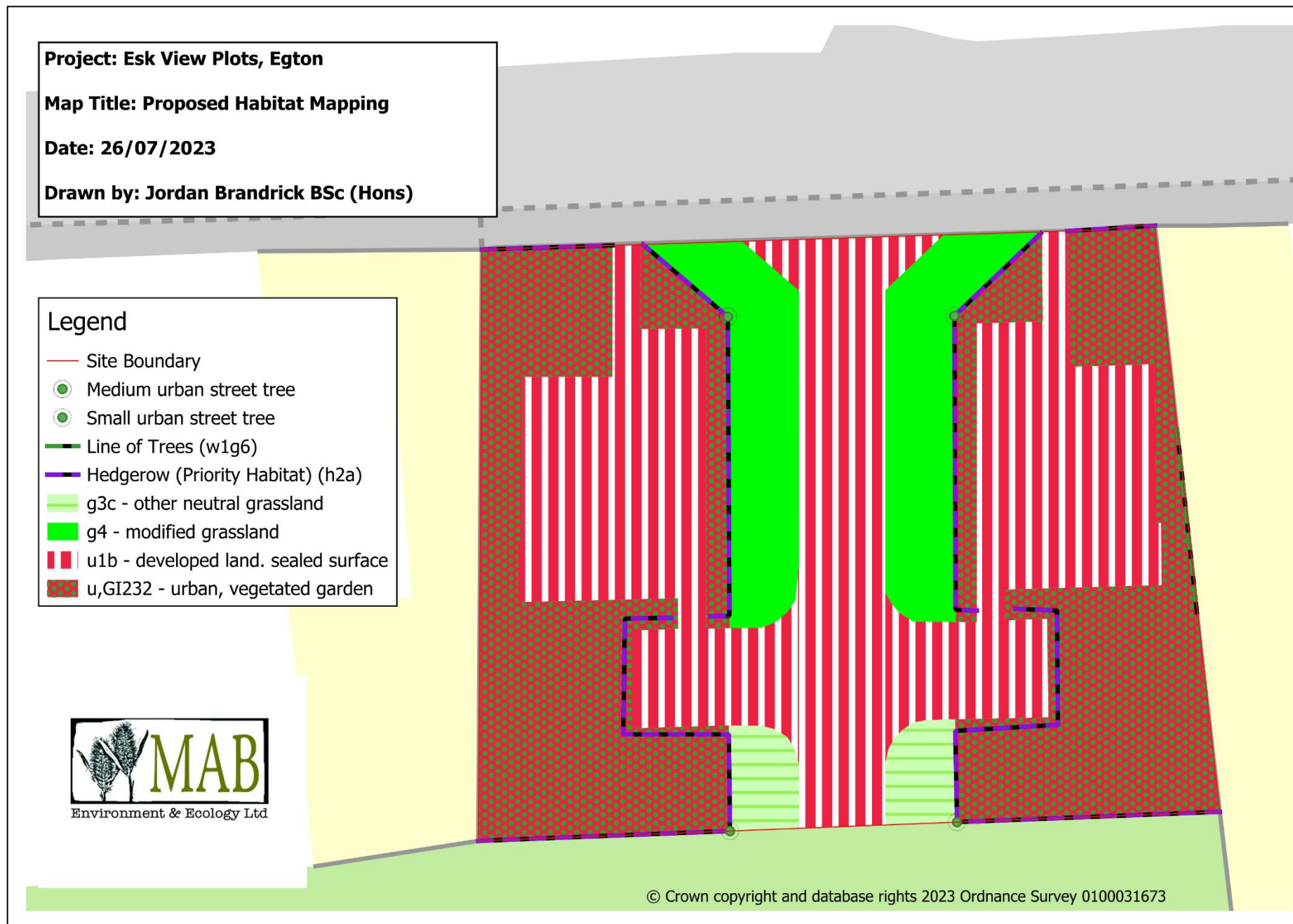


Figure 5: Proposed habitats.

7 Biodiversity Net Gain Metric

7.1.1 The proposed development will result in a 39.92% net gain in habitat units and a 57.56% increase in hedgerow units. This satisfies local policy and the trading rules of the metric.

<p style="text-align: center;">Total net % change</p> <p style="text-align: center;"><small>(Including all on-site & off-site habitat retention, creation & enhancement)</small></p>	<i>Habitat units</i>	39.92%
	<i>Hedgerow units</i>	57.56%
	<i>Watercourse units</i>	0.00%
<p style="text-align: center;">Trading rules satisfied?</p>		Yes ✓

Figure 8: Headline results.

8 Habitat creation & management enhancement

Other Neutral Grassland

8.1.1 Creation/enhancement of the grassland should follow practiced guidelines in meadow creation/restoration. Enhancement will likely involve the following methods:

Preparation

- Current sward should be kept short during autumn and spring
- Create at least 50% bare ground in June-mid-July by mechanical management (scarify ground)

Sowing

- Seed mixtures spread between August- late September OR in March – April
- Seeds should be spread using the recommended rate (i.e., 4g/m²)
- Seed should be scattered on surface - replicating natural processes.
- Scattered seeds will need to be in contact with bare soil – rolling of recipient field straight after seed has been spread will achieve this.
- Vegetation growth should be restricted in the autumn of first year to reduce competition – this can be managed by an additional cut in the late autumn.

8.1.2 Recommended species can be found in Appendix 1.

Tree Planting

8.1.3 Planting of new trees should be undertaken between November-March. Planting should be avoided during very cold or windy weather – not in frozen or waterlogged soils.

8.1.4 Tree species should be native. Suitable trees species include, but are not limited to, Field Maple (*Acer campestre*), Sycamore (*Acer pseudoplatanus*), Birch (*Betula sp.*), and Oak (*Quercus robur*).

8.1.5 Bare-root and rootballed trees and shrubs should be planted immediately, but if this is not possible then they can be heeled in (temporary planting in the soil to prevent the roots drying out) until planting is possible.

8.1.6 To ensure that the trees are protected from damage, tree guards should be installed around the newly planted trees. Constructed timber basket guards will provide long-term protection until the tree reaches maturity.

8.1.7 Two years post-planting newly planted trees should be assessed to determine if they have established successfully. If any trees have failed then they should be replaced, a further check on any re-planted trees should be undertaken two years post planting.

9 Conclusion

A Biodiversity Net Gain (BNG) metric has been undertaken at Esk View, Egton to accompany a planning application for the construction of residential dwellings on an existing area of grassland habitat with a section of existing access track running through the middle.

To facilitate the development, a total area of 0.0609ha of grassland habitat will be lost to for the creation of the proposed buildings and access; and associated vegetated garden. This will be offset through habitat creation of moderate condition other neutral grassland, modified grassland (poor condition) and the planting of four trees. There was also a length of hedgerow to the north of the site removed prior to the site visit. A total length of 106m of native hedgerow will be planted as part of the development to offset this.

This ensures that the development will achieve a **39.92% net gain in habitat units** and a **57.56% net gain in hedgerow units**. This satisfies local policy and the trading rules of the metric.

10 References

BS42020. *Biodiversity - Code of Practice for planning and development*. British Standards Institution 2013.

Circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System.

<http://www.communities.gov.uk/publications/planningandbuilding/circularbiodiversity>

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019

National Planning Policy Framework 2018: <https://www.gov.uk/government/collections/revISED-national-planning-policy-framework#revised-national-planning-policy-framework>

UK Biodiversity Action Plan Priority Species and Habitats List. <http://jncc.defra.gov.uk>

Magnificentmeadows.org.uk. n.d. [online] Available at:

http://www.magnificentmeadows.org.uk/assets/pdfs/Restoration_using_a_seed_mixture.pdf

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

STEPHEN PANKS ^A, NICK WHITE ^A, AMANDA NEWSOME ^A, MUNGO NASH ^A, JACK POTTER ^A, MATT HEYDON ^A, EDWARD MAYHEW ^A, MARIA ALVAREZ ^A, TRUDY RUSSELL ^A, CLARE CASHON ^A, FINN GODDARD ^A, SARAH J. SCOTT ^B, MAX HEAVER ^C, SARAH H. SCOTT ^C, JO TREWEEK ^D, BILL BUTCHER ^E AND DAVE STONE ^A 2022. *Biodiversity metric 3.1: Auditing and accounting for biodiversity – User Guide*. Natural England.

Appendix 1: Recommended species

Wildflowers (20%):

Centaurea nigra - Common Knapweed
Cerastium fontanum - Common Mouse ear
Conopodium majus - Pignut
Geranium sylvaticum - Wood Cranesbill
Hypochaeris radicata - Cat's ear
Lathyrus pratensis - Meadow Vetchling
Lotus corniculatus - Bird's foot Trefoil
Plantago lanceolata - Ribwort Plantain
Primula veris - Cowslip
Prunella vulgaris - Selfheal
Ranunculus acris - Meadow Buttercup
Rhinanthus minor - Yellow Rattle
Rumex acetosa - Common Sorrel
Sanguisorba officinalis - Great Burnet
Succisa pratensis - Devil's bit scabious
Trifolium repens - White Clover
Viola riviniana - Common Dog Violet

Grasses (80%):

Agrostis capillaris - Common Bent
Anthoxanthum odoratum - Sweet Vernal Grass
Festuca rubra - Red Fescue
Dactylis glomerata - Cocksfoot
Poa trivialis - Rough Meadow

Appendix 3: Local Planning Policy

North York Moors National Park Authority Local Plan, July 2020

Strategic Policy C - Quality and Design of Development

7. Proposals enhance local wildlife and biodiversity, for example through the inclusion of nesting boxes and bat roosts;

Strategic Policy H - Habitats, Wildlife, Biodiversity and Geodiversity

1. The conservation, restoration and enhancement of habitats, wildlife, biodiversity and geodiversity in the North York Moors National Park will be given great weight in decision making.

2. All development and activities will be expected to:

a) Maintain and where appropriate enhance features of ecological value and recognised geodiversity assets;

b) Maximise opportunities to strengthen the integrity and resilience of habitats and species within the National Park and provide a net gain in biodiversity; including those species for which the National Park supports a significant proportion of the regional or national populations and those found at the edge of their range. Examples would include nightjar, honey buzzard, goshawk and turtle dove; and

c) Maintain and where appropriate enhance existing wildlife connections and landscape features such as water courses, disused railway lines, hedgerows and tree lines for biodiversity as well as for other green infrastructure and recreational uses.

3. Development proposals that are likely to have a harmful impact on protected or valuable sites or species will only be permitted where it can be demonstrated that: a) There are no alternative options that would avoid or reduce the harm to the protected or valuable interest;

b) Suitable mitigation measures to avoid or reduce the harm have been incorporated into the proposals and will be maintained in order to retain their biodiversity or geodiversity benefits;

c) Any residual harmful impacts have been offset through appropriate habitat enhancement, restoration or creation on site or elsewhere; and

d) The wider sustainability benefits of the development outweigh the harm to the protected or valuable interest.

Proposals will be considered in accordance with the following hierarchy:

International Sites and Protected Species:

Proposals that have a likely significant effect on European sites (comprising Special Areas of Conservation, Special Protection Areas and Ramsar sites) will be subject to an

Appropriate Assessment in accordance with the Habitats Regulations. Where the assessment indicates that it is not possible to ascertain that the proposal, either on its own or in combination with other plans or projects, would have no adverse effect on the integrity of the site, development will only be permitted in exceptional circumstances where there are no alternative solutions, there is an imperative over-riding public interest and compensation measures are secured. This protection will be extended to proposed or potential European sites and significant weight will be given to this policy in areas where the presence of internationally important features is recognised but no formal designation process has begun.

National Sites and Protected Species:

Proposals that would adversely affect the special interest features of a Site of Special Scientific Interest or National Nature Reserve or the nature conservation interest of a nationally protected species will only be permitted where the benefits of the development clearly outweigh the impact on the protected interest.

Regional and Local Sites and other Valuable Habitats and Species:

Proposals that would adversely affect any locally designated site such as a Local Nature Reserve, Local Wildlife Site, Regionally Important Geological or Geomorphological Site, Sensitive Marine Area, Marine Conservation Zone, or other valuable habitat or species (including Local or National Biodiversity Action Plan priority habitats or species) will only be permitted where the benefits of the development clearly outweigh the impact on the protected interest

4. Where a proposed development would attract a significant number of additional visitors to an area or facility, it should be demonstrated how any potential impact upon the area or feature of biodiversity interest will be managed as part of the new development.

Appendix 4: Condition Assessment for Proposed Other Neutral Grassland Habitat

Site name and location	Esk View Plots, Egton	On-site or off-site	Onsite
Limitations (if applicable)	NA	Survey reference (if relating to a wider survey)	NA
Grid reference	NZ80980633	Habitat parcel reference	
Habitat Description			
ukhab – UK Habitat Classification			
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	<p>The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present.</p> <p>Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.</p>	Yes	Grassland to be planted as per recommended species listed in the UKHab description of Other Neutral Grassland.
B	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.	Yes	Area is to be left to grow unmodified - as such sward should be naturally uneven.
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens ¹ .	Yes	Full area is to be planted with ONG species and maintained.
D	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%.	Yes	No bracken proposed within the area. To be removed as part of management if required.
E	<p>Combined cover of species indicative of sub-optimal condition² 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.</p> <p>If any invasive non-native plant species³ (as listed on Schedule 9 of WCA⁴) are present, this criterion is automatically failed.</p>	N	Located within an area which will be residential as such is unlikely to be free from suboptimal condition species and some damage from human activity.

Appendix 5: Landscaping Plan

